Coryphus axillaris

179

335

Crenilabrus quadrimaculatus, Garrett.

B. 6; D. 12–9; A. 3–13; I. 1–5; P. 15; C. 3, 1, 6, 6, 1, 3.

The greatest depth of the body equals the length of the head, which latter constitutes one-fourth of the fish. Both dorsal and ventral outlines are similarly arched. The upper profile of the head is nearly straight. The eyes are oval in shape, their greatest diameter entering about four and a half times in the length of the head, and exactly midway between the tip of the snout and the origin of the lateral line. The hinder termination of the maxillary does not quite reach the anterior line of the eye.

The dorsal fin commences at a point immediately above the base of the pectorals, and its spiny portion is twice the length of the soft, and the rays gradually increase in height posteriorly, though preserving a gently arched outline. The anal fin passes over a base a trifle more than half that of the dorsal, and extends a little more posterior to the fin above. It tapers rather rapidly posteriorly. The ventrals are slightly pointed, and the caudal is large and truncate behind.

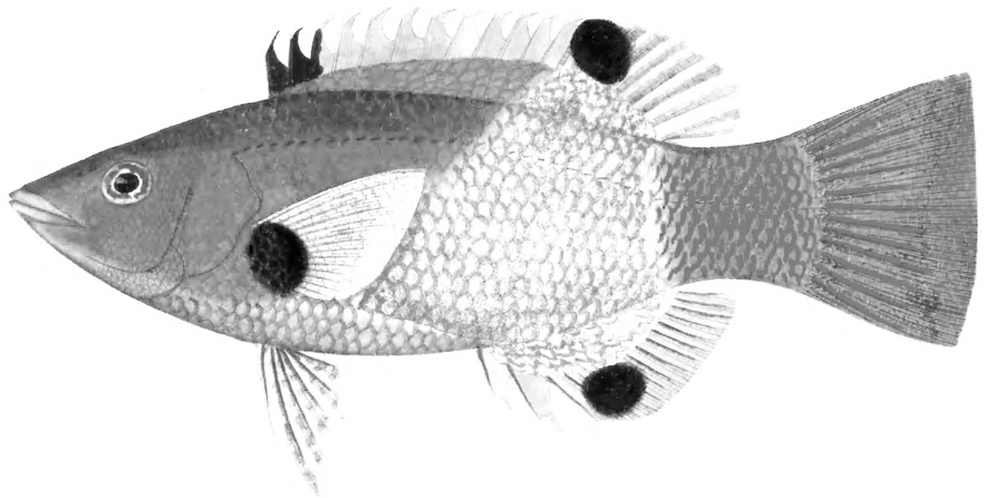
Color: the head, and the anterior half of the body, obliquely upward as far as the origin of the soft portion of the dorsal is reddish brown, and the posterior half carnation, passing into rich orange yellow on the caudal trunk and fin. The lower line of the head, breast and belly, lead color. Irides varied with light pink and vermillion. The pectorals are light carnation, and the ventrals pale with their rays articulated with light and dark olivaceous. The spiny portion of the dorsal is reddish brown, its soft part nearly colorless with orange-yellow rays. Anal pale olivaceous. A large sub-circular spot on the base of the pectorals, and a similar one on the anterior half of the soft dorsal and anal, deep black. The anterior fourth of the spiny portion of the dorsal is also deep black

Length, 5¾ inches.

Habitat. Society Isls. Panmotu Isls.

Remarks. A very rare species, of which I was fortunate to procure a single example. The four conspicuous black spots will at once determine the species. At the latter location I saw several swimming about the coral reefs.

179



Cossyphus axillaris

Conyphus bilineatus jun. 286 388

Cremilabrus multicolor, Garrett.

D. 12–11; A. 3–18; L. 1–25; L. tr. 5, 6, 6, 4.

The upper and lower outlines are similar, both pursing gently towards and the length of the head equals the greatest depth of the body. The somewhat large eyes are about as long as the head in their diameter.

The dorsal fin commences immediately above the hinder edge of the opercle, and the spinous portion comprises rather more than two-fifths of the fin, which is posteriorly arcuate. The anal starts from a point opposite the tenth dorsal spine and is a little deeper anteriorly than the fin above. The ventrals, when closely applied to the abdomen covers the vent with their tips. The pectorals are as long as the ventrals, and the caudal is large and posteriorly truncate.

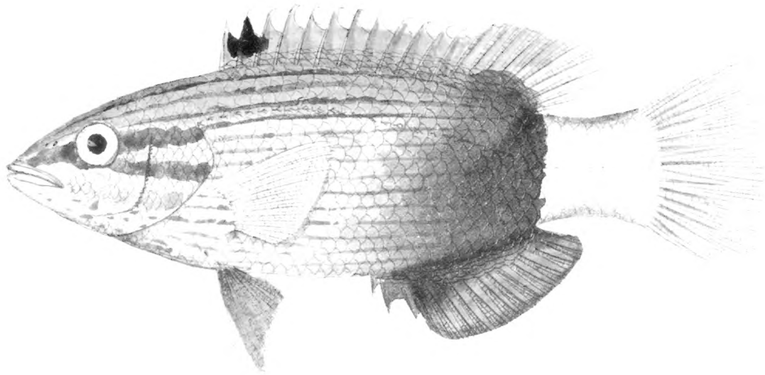
The head and anterior half of the body is of a pink colour, the posterior coming fades into yellow above. The posterior part of the body, as far as the termination of the dorsal and anal fins is bordered

which color spreads over the basal parts of the contiguous fins and fades away anteriorly. Both head and body bincated with purple brown, which become vermilion red beneath where they are more or less interrupted. The pectoral and corresponding to the horizontal rows of scales. The middle horizontal third of the head is banded by three bands of the same color as the upper bincations, the upper one interrupted by the eye. Iris silvery, with an inner red ring. Dorsal trunk and fin pale grisley, the latter with the rays edged with orange and red. The dorsal fin is yellow, with a black anterior spot. Anal black with the central portion yellow. The other fins colorless.

Length, 4½ inches.

Habitat Vancouver Isln.

This must be an extremely rare fish, as I discovered only a solitary example during several years residence at the above group. It is closely allied to C. chatrolei, Lesson, from Mauritius, and the markings somewhat resemble C. amata.



388
286

Sf. 100
Coryphaena bilineata Jur.

Coryphus bilineatus at.

Crenilabrus awata, Garrett.

B. 6; D. 12-10; A. 3-12; V. 1-5; P. 16; C. 2, 1, 6, 6, 1, 2.

The depth of the body at the origin of the dorsal fin equals the length of the head, which latter constitutes a fourth of the total length of the fish. A slight concave depression may be observed immediately above the eyes. The hinder tip of the maxillary reaches a vertical passing through the center of the eye. The preopercular serrations are minute. The eyes are rather large, oval in shape, their greatest diameter entering five times in the length of the head, and placed a little nearer to the origin of the lateral line than the end of the snout.

The dorsal fin passes over a base nearly half the length of the fish, caudal excluded. Its altitude is nearly the same throughout, and its spiny portion comprises about two-thirds of the fin. Its soft part is posteriorly truncated. The anal fin is less than half the length of the dorsal or nearly one-fifth the entire length of the fish. Its lower margin is convex.

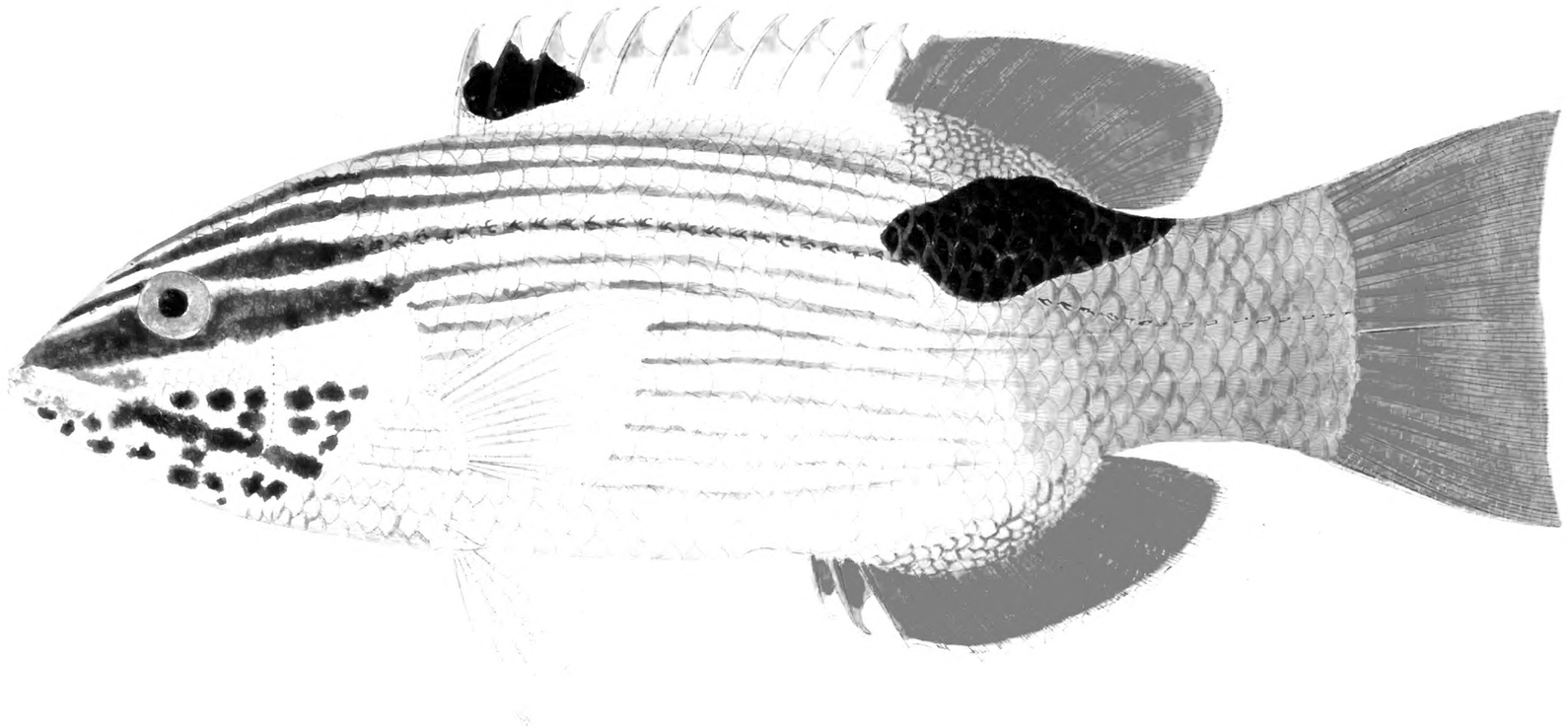
The ventrals have their anterior portion slightly prolonged into a point, which, when closely appressed to the abdomen reaches the vent. Caudal slightly concave.

Color pinky-white, gradually passing into yellow posteriorly, and longitudinally lineated with pinky-brown. Head carnation along the middle, the lower parts irregularly spotted with brown, and the upper portion longitudinally striped with the same color. Irides silvery. A large oblong deep blue-black spot marks the upper posterior part of the body. The upper portion of spiny dorsal, its soft part, together with the caudal and anal, rich yellow, the latter edged with pink, and the former with a large anterior blue-black spot. Ventrals and pectorals pale pink.

Length, 10 to 12 inches.

Habitat.— Sandwich Isls.

Remarks.— A common and beautiful species, called by the natives A-wa-la.



287

180

pag. 180
Coregonus vitreus Cuv.

Coregonus modestus

181

288

Cremilabrus modestus, Garrett

Crem. labrus modestus, Garr. Pro. Cal. Acad. Nat. Sciences, Vol. 3, p. 107, 1867.

B. 6; D. 12-10; A. 3-12; V. 1-5; P. 17; C. 2, 1, 6, 6, 1, 2.

The greatest depth, which occurs beneath the origin of the dorsal fin, is about one fourth of the total length, and the greatest thickness is just half of the above mentioned depth. The head, which comprises a a little more than one-fourth of the whole fish, presents a slight concave depression above the eyes. The preopercular serrations are very small. The eyes are sub-circular, their greatest diameter entering nearly six times in the length of the head, and twice in advance of their own orbit. The hinder tip of the maxillary reaches a vertical passing through the centre of the eye. Twelve longitudinal rows of scales may be enumerated between the lateral line and the vent; 10 rows on the side of the caudal trunk, and the median longitudinal row on the body contains 30 scales. The lateral line which passes over 33 scales consists of slightly branched tubes.

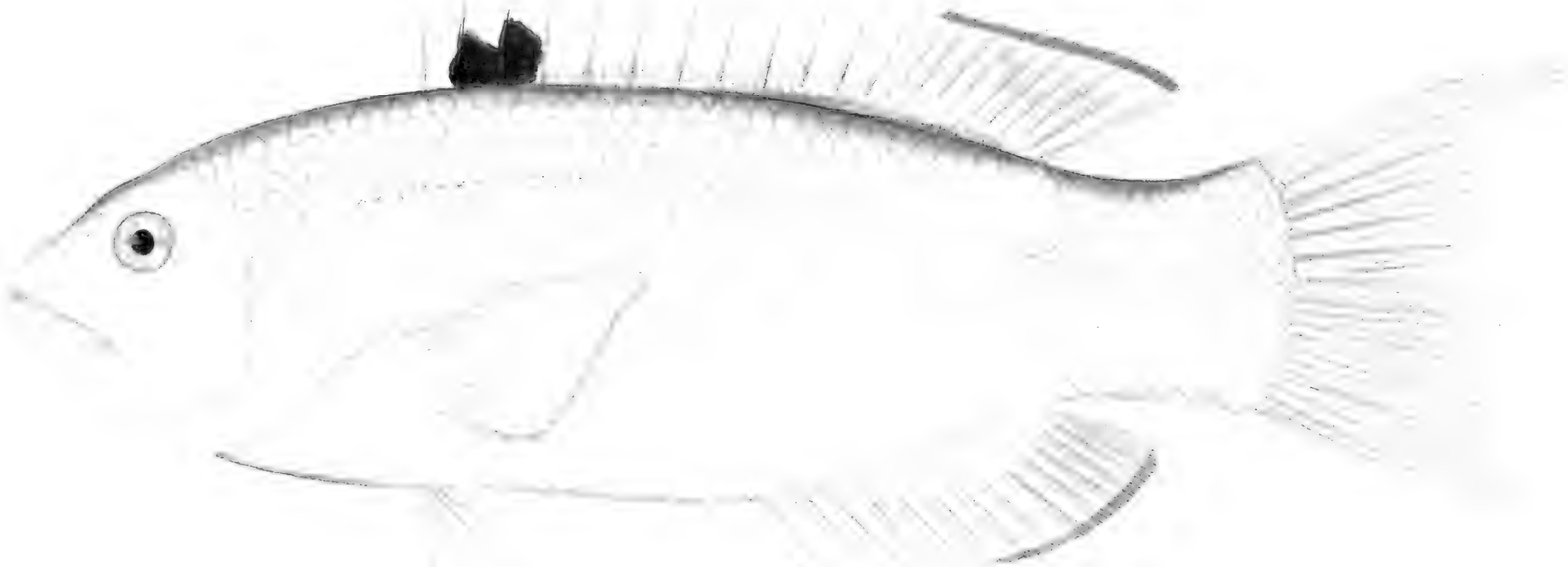
The dorsal fin extends over a base equal to half the length of the fish, caudal fin excluded. Its soft portion falls slightly short of one-third of the total fin. The anal fin, which is nearly half as long as the dorsal, has its hinder termination slightly more posterior. The acuminately pointed ventrals, when closely appressed to the abdomen nearly reach the anal fin. The large caudal has its posterior upper and lower angles considerably prolonged and pointed.

Snout pale brown, passing into bluish-gray beneath, and obsoletely lineated longitudinally with darker; of large oblong pale diffuse spot beneath the posterior end of the dorsal fin, which is preceded by a gently curved and backward, tinged with yellow. The dorsal fin is pale grayish, marked anteriorly with a large blue-black spot, its soft portion tinged with reddish and margined above with yellow. The anal, ventrals and caudal are bluish-gray, the first externally tinged with faded red and edged with yellow. Pectorals nearly colorless.

Length 18 inches.

Hab. Sandwich Isls.

Remarks. We have obtained only two individuals of this species, both of which were exposed for sale in the Honolulu market. The colors, which are yet similar, unquestionably changed soon after the death of fish.



Pl. XXIX fig. B.
Cyprinodon variegatus

No 330

Labroides dimidiatus

genus Cheilinus, Gronov.

Form elongate, compressed; head rather long, pointed, naked. Mouth small. Teeth in a single series in both jaws, and at times as far as the palatine bones. Lateral line composed of simple tubes and interrupted as in the genus Cheilinus. Dorsal fin long, and deeply lobed; anal rather short, lobed behind.

We have established this genus for a small, compact species, which differs from Cheilinus in its more slender form, longer head, shorter dorsal and simple lateral line tubes.

Cheilinus semibalteatus, Gunth.

D. 9–11; A. 3–10; P. 1–5; V. 1/11; L. 2, 1/6, 1/2.

Of this rare fish only a brown skin has come under my notice, which accounts for our not giving but an imperfect delineation of its characters.

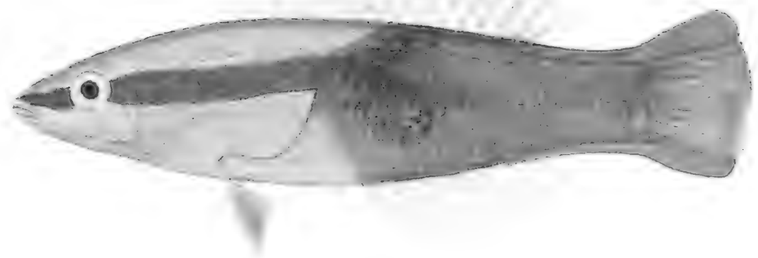
The upper and lower contours are quite similar, and the head comprises nearly a fourth of the fish's length, if not rather less.

The dorsal fin commences above the base of the pectoral, and extends over a base equal to half the length of the fish, caudal excepted. The spinous and soft portions are about equal length, the former the longest, and the fin tapers either way from the first or third spine. The anal has over a base equalling the length of the dorsal, tapers away posteriorly, and is somewhat

a trifle nearer to the caudal than the first element. The pectorals are rather small, and inserted beneath the hinder base of the pectorals, which latter are wide therefrom.

The anterior half of the fish is lemon yellow, the posterior parts black as far as the end of the caudal. A black bite commences at the end of the snout, passing through the eye, gradually dilating in its course until finally lost in the posterior black ground. A similar stripe extends from the snout to the origin of the dorsal fin, bright golden yellow. Dorsal and anal light greenish, and the pectorals, together with the ventrals, are yellowish, and colored stripe taken from the hinder termination of both pairs of fins, gradually becoming wider on their way to the posterior angles of the caudal fin.

Length inches.



Pantoffel-Bifala

× 2
Labroides dimidiatus

330

Tribodus

Chilinus ~~crassissimus, Garman~~ 383

Plate

B. 5; D. 4/10; A. 4/8; P. 15; V. 11; C. 23, 6, 5, 6, 1.

The dorsal region is slightly more arched than the ventral. The greatest depth of the body, which is at the origin of the dorsal fin, equals the length of the head, which latter constitutes two sevenths of the entire length of the fish. The eye is rather large, nearly circular in shape, and its diameter not quite one-sixth the length of the head. The line of profile from the end of the snout to the nape is nearly straight. The posterior end of the maxillary reaches a vertical touching the anterior limb of the orbit. There are 11 cuneiform [illegible] on the deepest part of the body, or mid-siding the elongate scales along the dorsal base. Two concentric rows on the cheek, each of three scales.

The dorsal fin takes its origin above the base of the pectorals, and gradually increases in altitude posteriorly, where it is rounded off. The anal is fully as deep as the soft part of the dorsal, and presents a posterior angle. The ventral, have their first soft ray [illegible], when closely laid back do not quite reach the vent. The pectorals are about the same length as the ventrals. The large caudal including the trunk equals the length of the head when expanded at its lower margin is slightly convex.

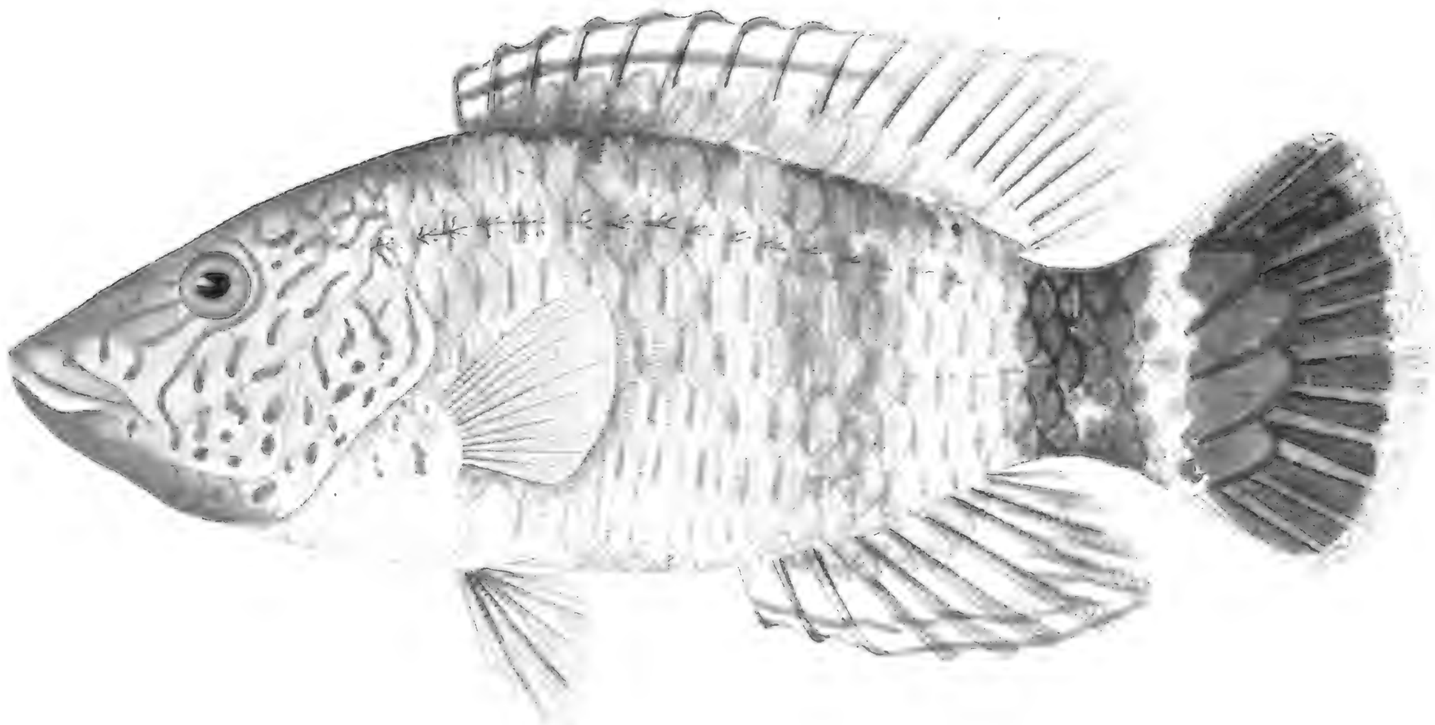
The body is greenish gray, and in the living fish is marked with four or five vertical clouded darker bars which are most conspicuous posteriorly. Each scale on the flanks is ornamented with two, vertical linear spots, the anterior one brick red and the posterior light blue. Head pale green, passing into lead color beneath, and variously marked with irregular disposed vermillion lines and irregular shaped small spots, the former mostly radiating anteriorly from the orbit. The

dorsal is mottled with [illegible] and dusky green, and traversed by a longitudinal semilunar line, which becomes diffuse on the soft part of the first upper margin, is more or less edged with the same color. The anal is marked similar to the dorsal in it color and markings. Ventrals have pale green rays and intermuscular pectoral rays pale amber. The caudal is more or less dusky olive centrally, becoming greenish towards the margins and posteriorly vermiculated with red.

Length, 8 to 10 inches

Habitat.—Society Isls. Kingsmill Isls.

Remarks.—At the former group this Cheilinus is called "Pa-pa-e"; and at the latter "Ten-tai" In a rough drawing of a specimen which I made at the Kingsmill islands, the ground color is marked as blackish olive, and has red spots on the breast, and a few small emerald green ones on the tail. The spinous part of the dorsal is more or less reticulated with red. Otherwise the colors and markings are similar.



Tab. 161
Perca Tricolorata

chlorurus Rif.

Cheilinus ~~prenetatus, pinetb.~~

D. 9/12, 9–11; A. 3/9; P. 11; L. 1. 25; L. 1, 6, 5, 1, 2.

The greatest depth of the body is little more than the length of the head, which latter enters about four times in the total length of the fish. The lateral, circular, this diameter enters six times in the length of the head. The upper line of the head is slightly concave. The upper margin of the cut portion of the dorsal is rounded. The anal, which is rather in its outline, commencing opposite to the ninth spine in the dorsal, prolonged large and rounded off posteriorly.

The living fish is olivaceous, with darker vertical broad-like broad bars. Each scale on the body is marked with two round dots, the anterior one blackish-brown and the other blue-white. The head is dotted with minium-red, some of the dots having dark centres, and a few red lines in the region of the eyes. Some have red dots on the body, fins reddish. The dorsal fin is olivaceous, becoming vivid-red posteriorly, reticulated with minium,

and the spinous portion marginated with the same color. The soft portion is mottled with brownish-white and the spinous part with cream-white-yellow large spots. Most generally there is one or two greenish yellowish bands along the upper half of the spinous portion of the dorsal. The **caudal** is colored and marked like the dorsal, but the dots are larger and the posterior part of the fin is liver-red. The anal is darker than the dorsal, reticulated and dotted like that fin, but the dots are very small, crowded and greenish-white; it exhibits also two lower intramarginal red lines. Ventrals liver-red, dotted like the anal, but the dots more remote, and the rays are black. The pectorals have pale amber colored rays.

Length, 8 to 10 inches.

Habitat. - Sacnete, P.I., Kingmill P.I. Immaculate P.I.

Remarks. - The reticulated pattern and punctated appearance of this fish would at once determine it.

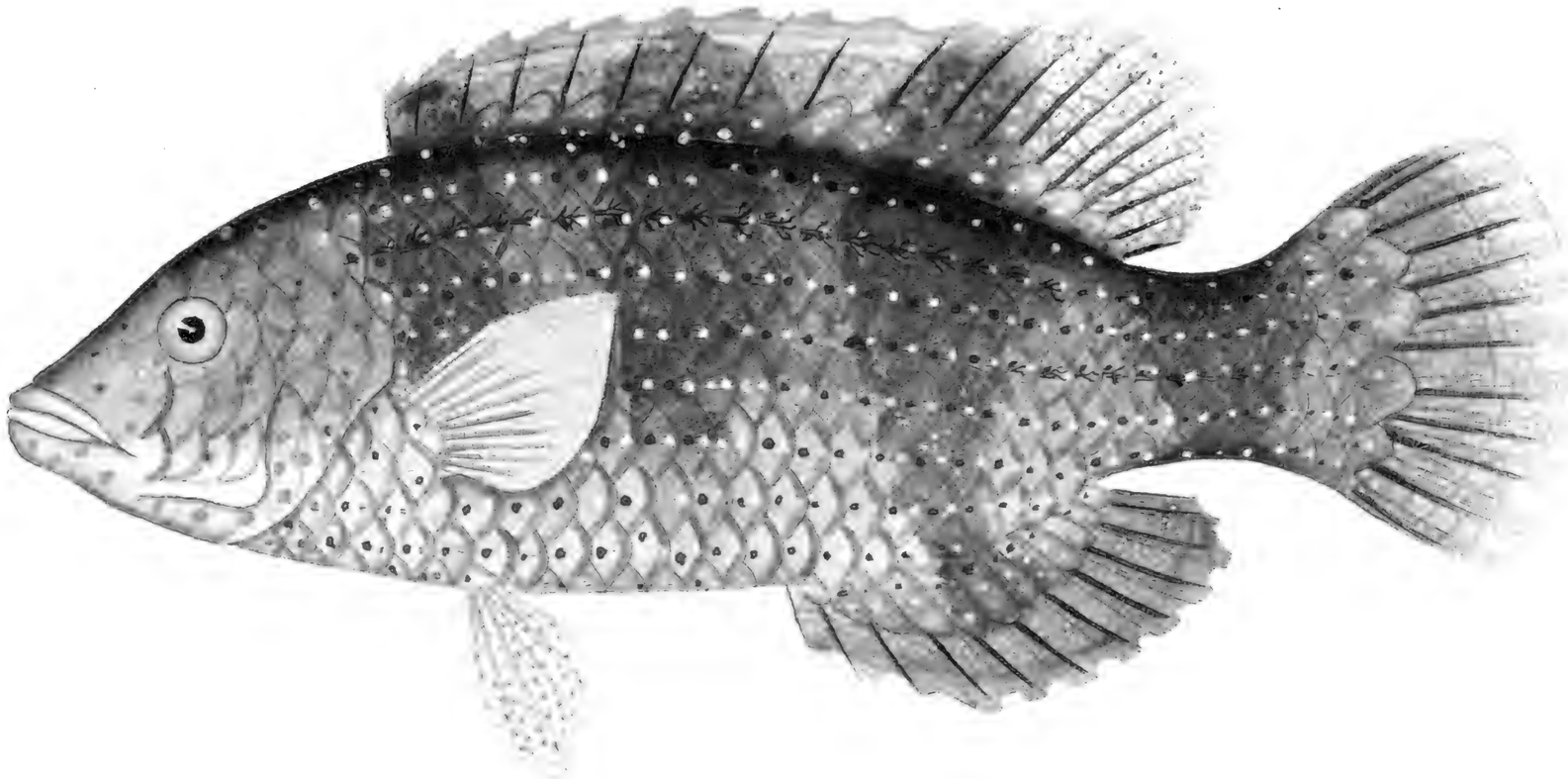


Fig. 132 Cheilinus chlorurus

Philinus antelatus

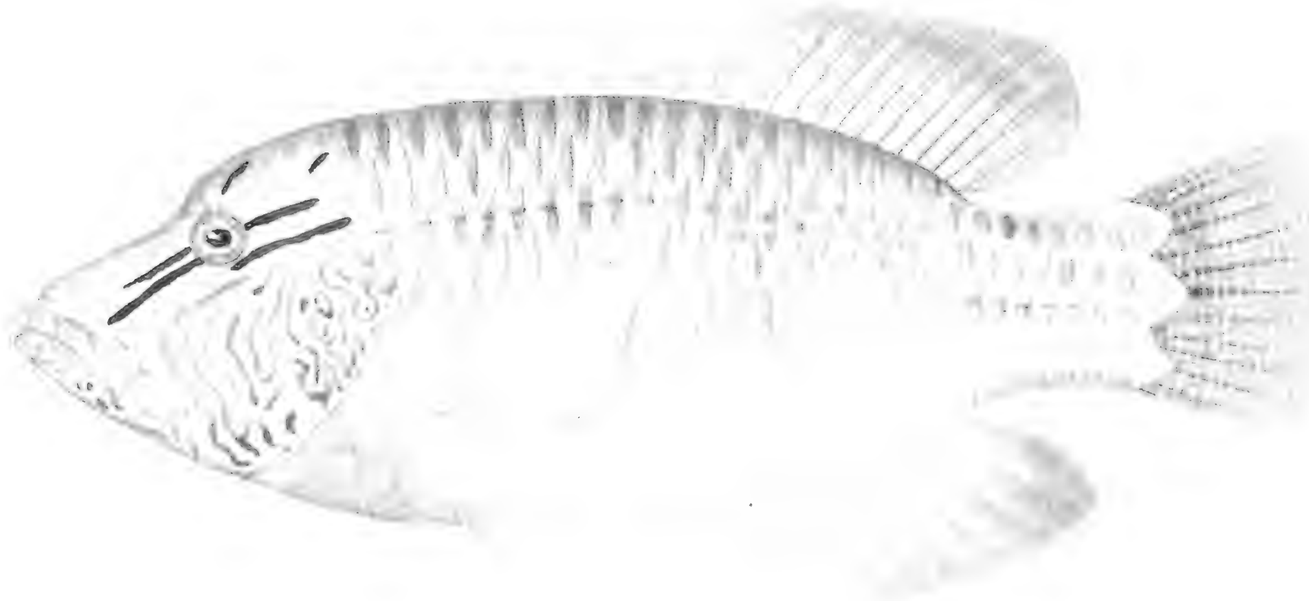
Genus Cheilinichthys, Cuvier

We have established this genus for a gigantic Labroid fish which formerly fell the victim of a character of the genus Cheilinus, viz. in the simple labial, the lateral line, the absence of scales on the head, except the opercle and subopercle which are covered with large meshes, the maxillary is more extensive than in the latter genus, the pectoral rays are the same and anal fins are not scaled along their base.

Cheilinichthys gigas, Bennett

This great labroid fish I have seen captured at the Cocos Islands, Fanning's Island, the Marquesas Archipelago, at the former location its provincial name is Allaman at the latter Papiro. Its flesh is often excellent flavor and is much esteemed by both Australians and foreigners. The largest example that came under my notice was caught with hook and line at Fanning's Island. It measured nearly 4 feet in length.

The length of the head and the greatest depth of the body are about equal, both being a little less than a third the total length of the fish. The eyes are rather ~~large~~ small, their diameter equal spaces to the length of the head. [illegible]



Tab. CXXXIII. figura.

Cheilinus undulatus

No 440

Cheilinus ~~cinctus~~ fasciatus Garrett

~~Hab.~~

[illegible]

The head conical, about one third of the total length, nuchal profile with well marked concave depression in front of and above the eye; the eye large, its diameter being one fifth the length of the head; the lateral line, which consists of simple tubes, passes over twenty four or twenty five scales. The median line scales in the median series of the body. The dorsal fin carries nine spines, the base of the pectoral, which is small, reaches as far posteriorly as the vent, where it is angulate. The anal, which does not extend quite so far as the dorsal, has the fifth ray prolonged into a filament. The pectoral are fan shaped. The caudal has its upper and lower rays prolonged in acute points.

Body greenish grey with nine, vertical, blackish or olive black, diffuse bars which are wider than their interspaces. A sixth one crosses the tail. Each scale in the bars is marked with a vertical deeper black line or spot. The interbars in the bars remotely dotted with red. The lower part of the body is finely dotted with vermilion. The nape, breast and hinder half of the head, including the anterior portion of the latter is light olive green and black bars passes from eye to eye and a short one on the nape, in which may be observed deeper colored spots. The region of the eye and cheeks with the intermediate vermillion lines and dots. Dorsal

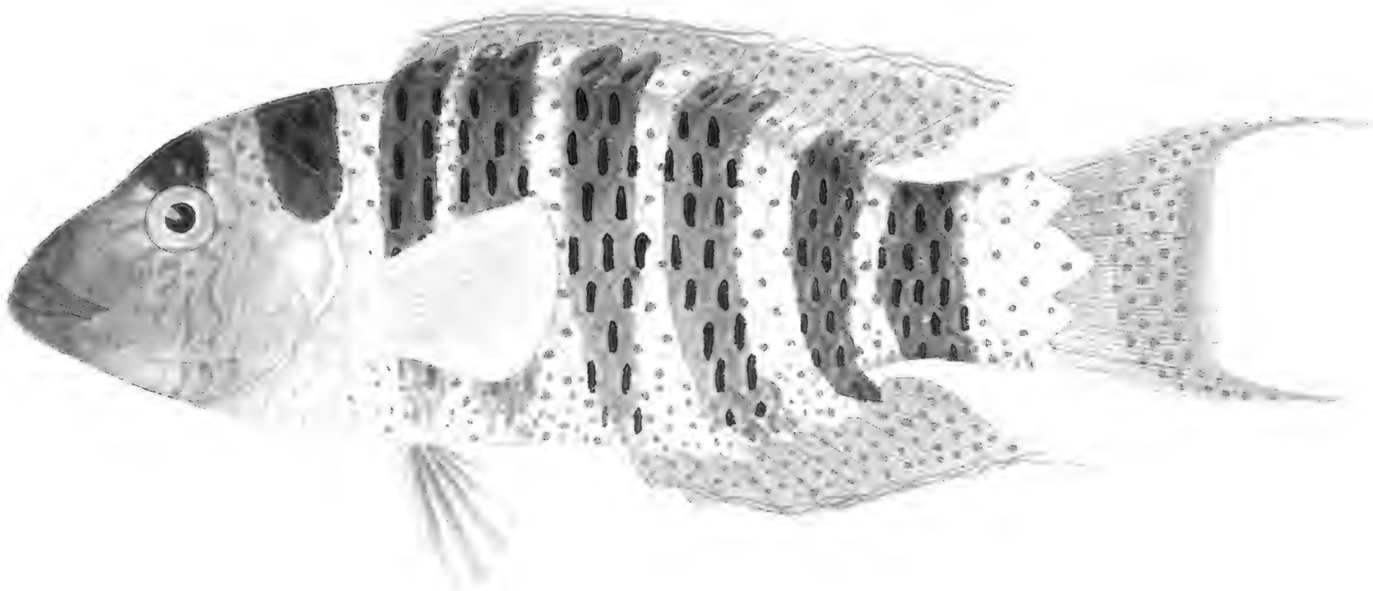
and anal pale greenish yellow, becoming paler outwardly, clothed with vermillion red, and each marked with two marginal undulating lines of the same color. Ventrals blackish becoming colorless outwardly; rays reddish. Pectorals, colorless membrane and reddish rays. Caudal blackish, with a middle, greenish yellow, crescent, which is bordered with blue. Length uncertain, lower part of tail broken.

Length 12 inches

Habitat.— Pin, small Isle.

Remarks.— General specimens collected at the above location. The filaments of the caudal become prolonged by age and the bars darker & back in old than in young specimens.

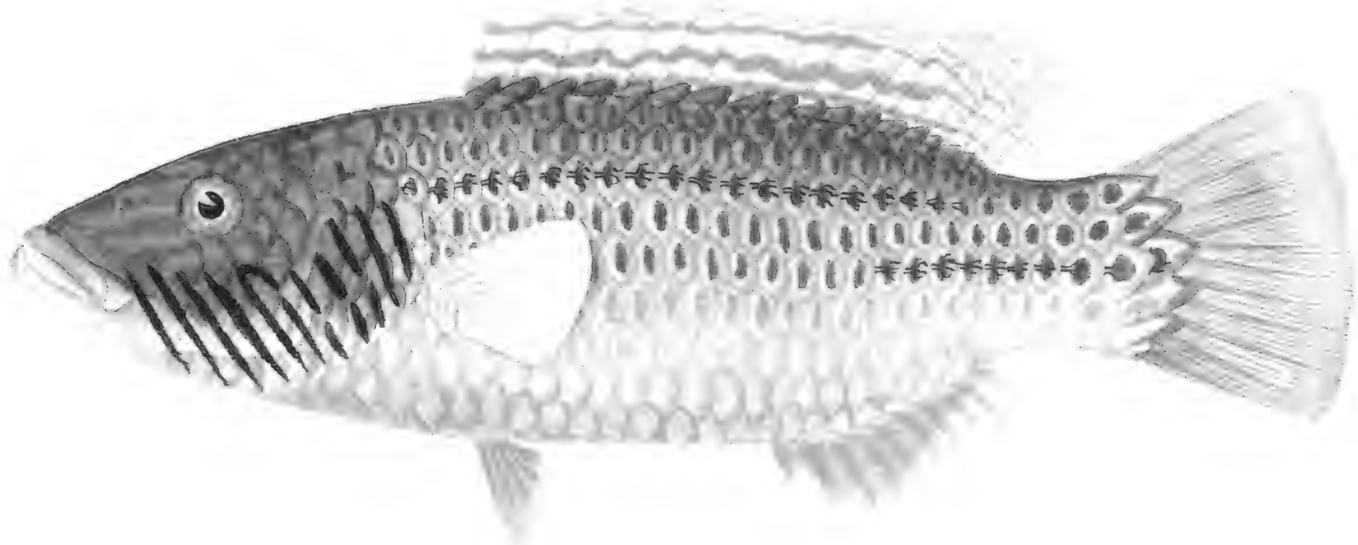
440



Pl. CXXXIV

Cheilinus fasciatus

radiatus



Gymnura Lucina Cuv.

Pl. 105. fig. 1.

Cuvierius radiatus

Hexagonostus, Sha

Station 66-39.

[illegible]

The upper line of profile is more strongly arched than the ventral outline, and the depth of the body equals a third of the length of the fish, caudal excluded. There may be enumerated 8 longitudinal rows of scales between the vent and the dorsal fin, and five rows along the side of the tail. The median series contains 22 scales, and the lateral line may be traced over 9 scales to the upper point of interruption and 10 scales below when it recommences. The scales are nearly all simple, though a few exhibit traces of bifurcation. The head is large, constituting nearly a third of the fish. Its upper line of profile rises up to the nape at an angle of about 33°, and exhibits a slight concave depression over the interocular region. The eyes are sub circular, their greatest diameter nearly a sixth of the length of the head, and less than their distance from the end of the upper jaw. The lower jaw is truncate, and the hinder edge of the maxillary

[illegible] on a plain with the
anterior lobes of the eye. There may be
seen the concentric rings of scales in the
cheek and in front of the interopercles.

The dorsal fin arises over the
base of the pectorals, and the fin gra-
dually increases in height to the eighth
or ninth soft ray, whence the fin
is rounded off, and the soft portion
comprises a little more than a third [illegible]
of the fin. The anal fin commences
opposite the eighth, closed spine under the fin
not extending quite so far back as the fin [illegible]
above. The pectorals and pectorals are in the [illegible]
of equal length, the latter rather broader, the
end the former when laid back do not
reach the anal fin by nearly their own
length. The caudal rays are even,
and when the fin is expanded exhibits
a convex hinder margin.

Colour greyish olive, sometimes
reddish grey, and light greenish
beneath. Each scale on the back with
a vertical olive-green marking and spots,
which on the tail form semi-spots
bordered by a stroke of a vermilion red
or orange-red, which is in many direc-
tions [illegible]

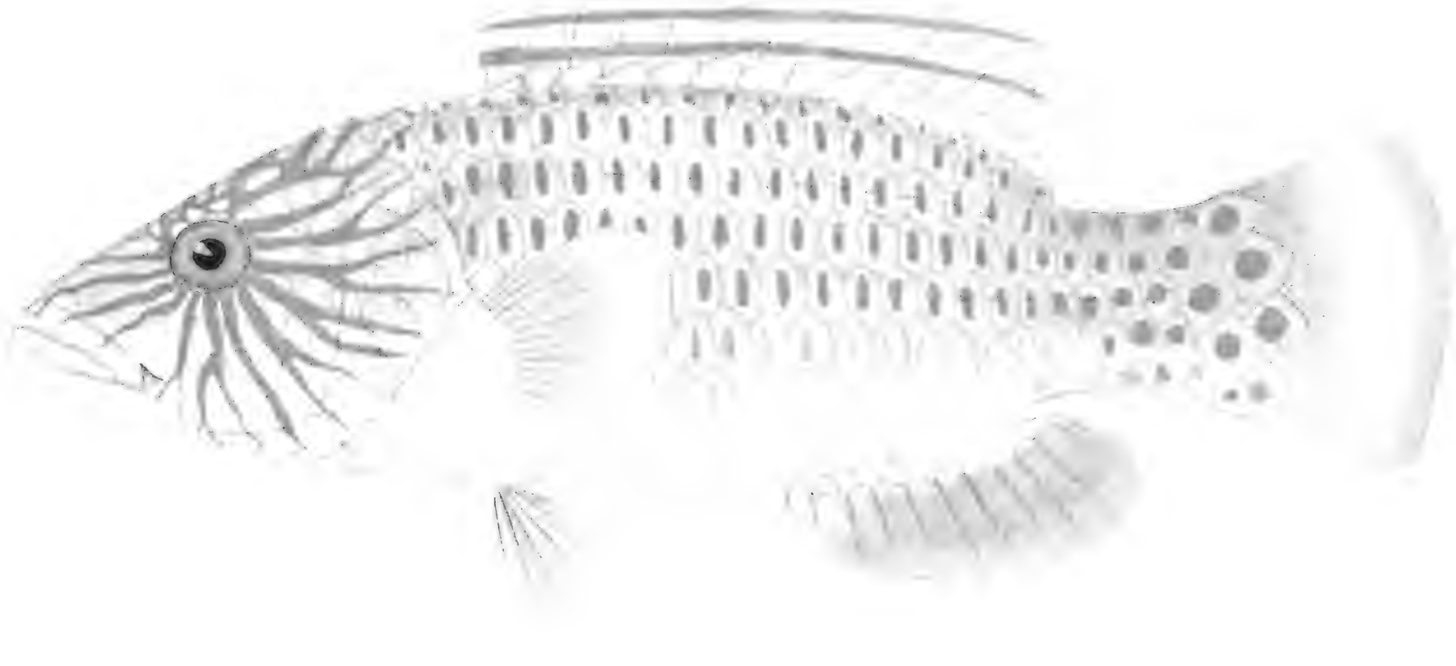
relation as the occipital longitudinal
or less bifurcate on the yellowish side
yellow with an inner brilliant.

The dorsal fin is nearly of the
same size as the back, and its spinous
portion is ornamented with two longitudi-
nal lines. The soft portion is faintly tinged
with light reddish. The anal fin is
light vermilion red, with a metallic
gloss. Tentacles light flesh, sometimes
light reddish with darkish purple black.
The pectorals are pale yellowish. The
caudal is the same color as the body,
in its basal third, the middle colorless
and the posterior third light reddish.

Length 9-11 inches.

Habt. Sunda isl.

Native name Rapai



Lef. 135. Fig. B.

Chilinus hexagonatus

Pseudacrilirus iexatania

Labroides bicolor

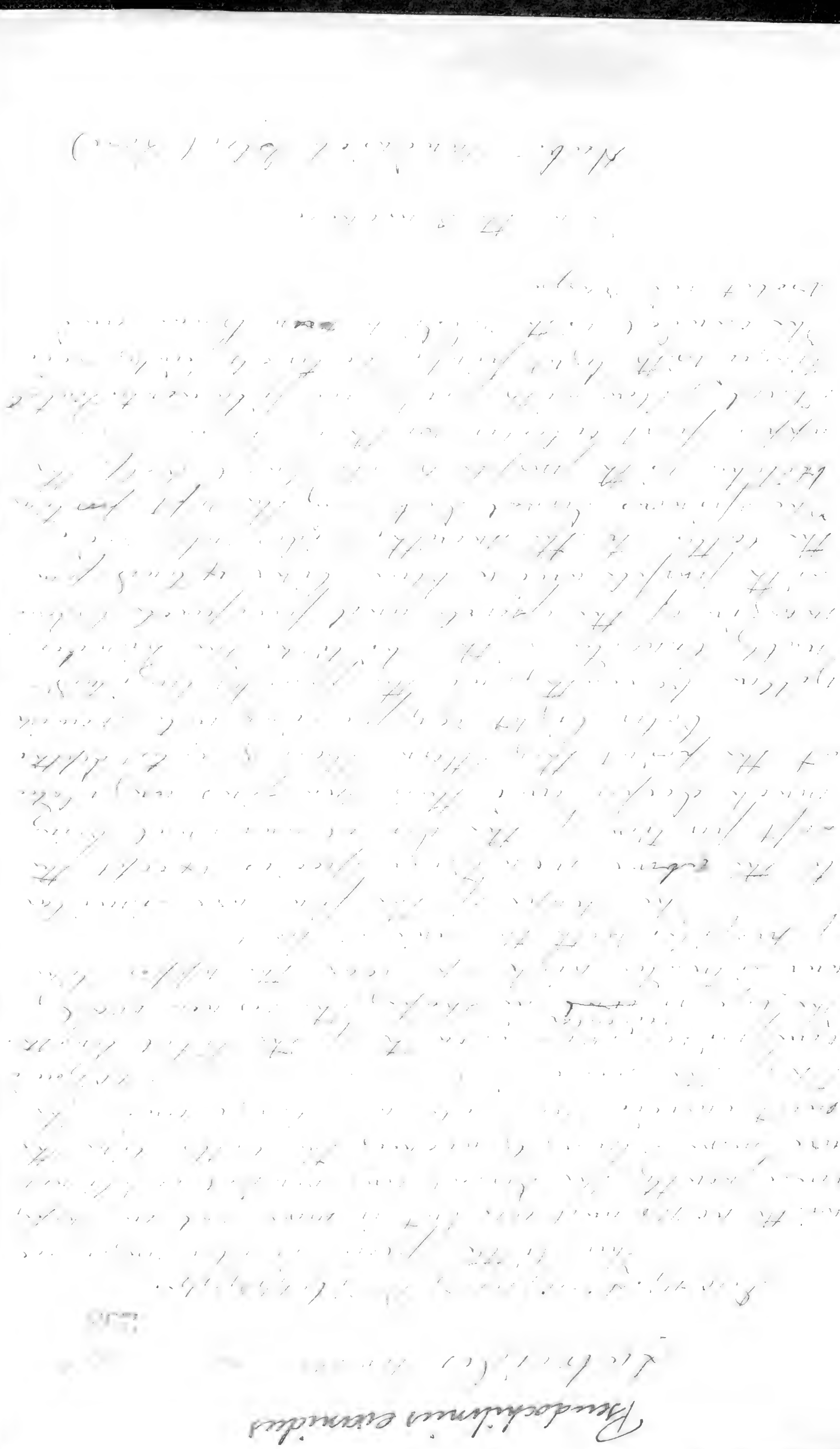
Description of the species of Labroides.

The elegant fish is slender, elongated, gentle and equally wide from head to tail, and the greatest depth of the body equals the length of the head, which is one-fifth of the total length of the fish, counted from the snout to the base of the caudal fin. The eye is large, occupies one-third of the length of the head, and is nearly three times as long as the snout. The mouth is small, the lower jaw projecting slightly beyond the upper, which reaches to the middle of the eye. The teeth are minute, in two rows in the jaws, those in the outer row being larger, more distant, and the canines more than three times as long as the teeth of the inner row.

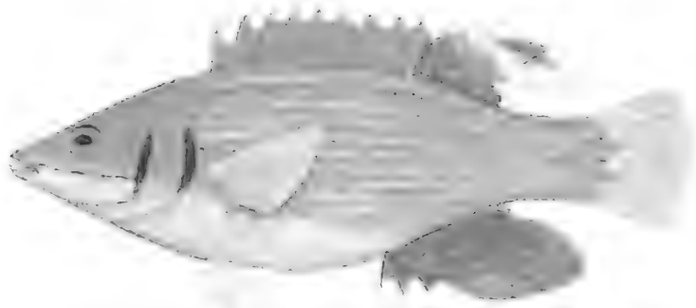
The dorsal fin arises over the base of the pectoral fins, the spines first three or four the longest, second and third spines equal in the little posterior filament. The soft portion of the fin is nearly as long as the depth of the body, rather shorter than the spinous portion.

The anal fin is as long as the soft part of the dorsal, tapering, the first spine and the first two soft rays forming a lobe, each with a slender filament longer than those in the dorsal fin.

The ventral fins, which do not quite reach the vent, and the caudal, which is rounded in its hinder margin, are violet, and the transparent membrane in the light yellow hence the yellow green in the caudal fin. The flank is adorned with six longitudinal vermillion red stripes, which are more than their width in breadth. The upper part



Pseudochilinus evanidus



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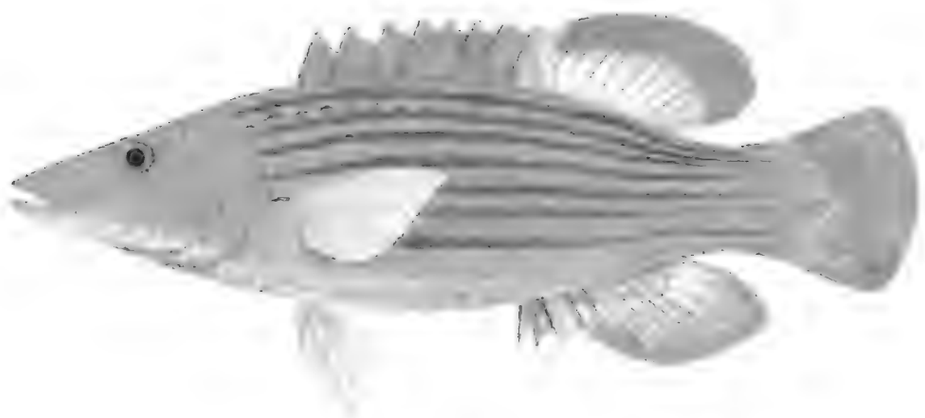
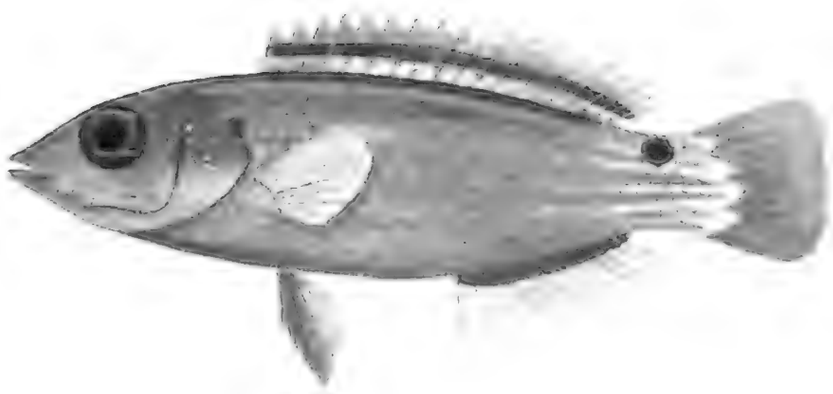


407

Pseudochilinus octotaenia



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Tab. 136. Fig. B. Pseudochilinus bimaculatus

Epinephelus ~~lutea~~ insidiator, Garrett.

Plate

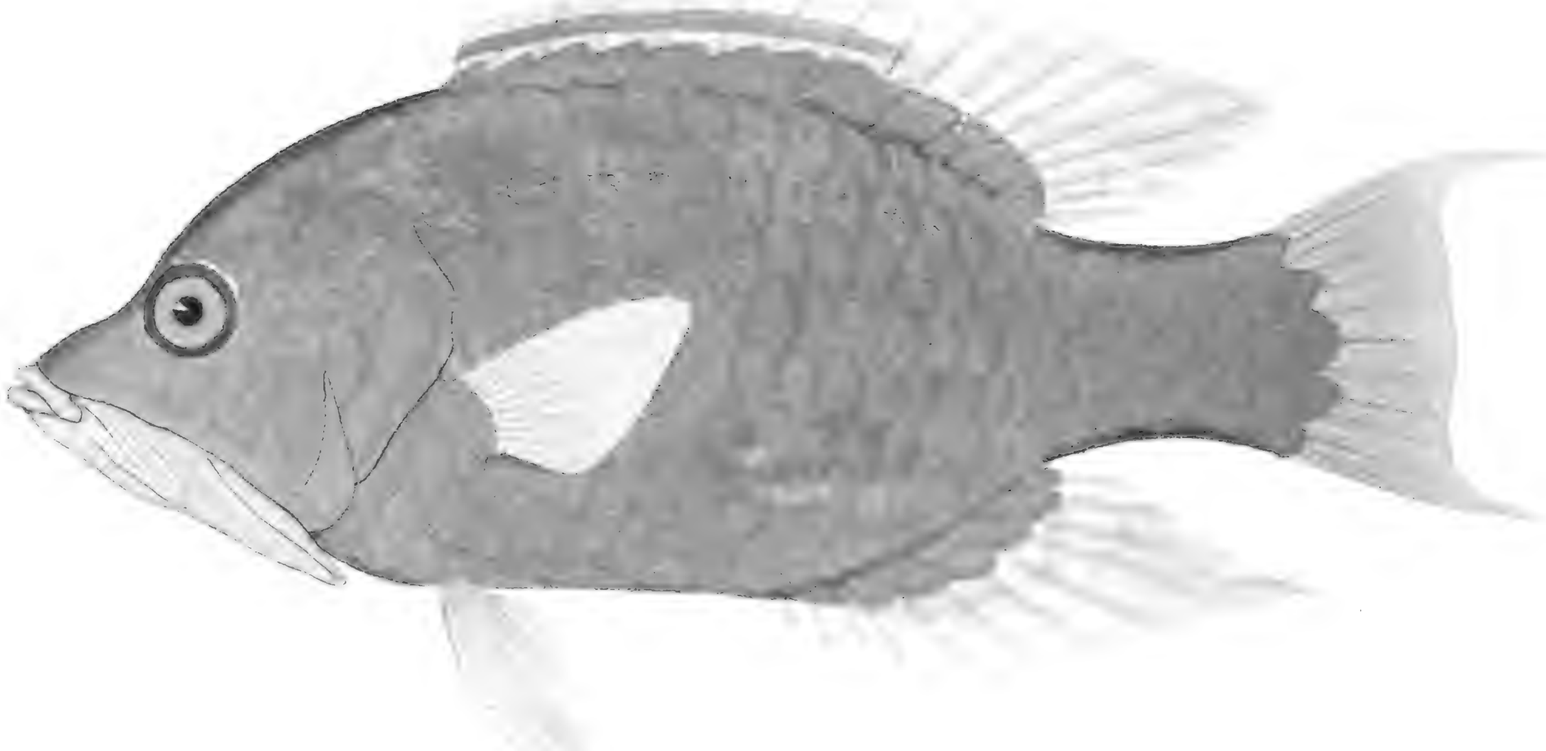
D. 5; A. 7–10; L. 5–7; L. 1–5; C. 17; C. 1, 1, 6, 3, 1, 1.

The depth of the body, at the origin of the dorsal fin equals the length of the head, or about one-third of the total length, caudal excluded. The upper line of profile from the end of the snout to the occipital region is concave. The eye is rather large, circular in shape its diameter entering five times in the length of the head.

The spiny portion of the dorsal extends on a base equalling the length of the head. The seventh ray of the soft portion of the dorsal and the last back reaches the caudal base. The anal base equals half that of the dorsal, and is deeper and more faintly posterior. The ventral are pointed, and rather pointed.

Color yellow, becoming darker by age. Each scale marked with a vertical, linear, dusky spot, which more under magnification on the back. Sometimes the spots are reddish. There is most generally a line along middle of the sides, with a ruby tint in inner side. The caudal is orange red, fading into yellow posteriorly. Pectoral rays yellowish, the other fins more or less yellow, the dorsal with the outline black spots and its spiny portion bordered by a narrow band and its upper margin edged with the same color. The hinder termination of the soft part of the dorsal and anal, tinged light red.

Length 12 inches. Habitat.—Society Isl.



Ap. 134

Balistes insidiator

216

Epinephelus tukulensis, Cuv. & V.

Hab. [illegible]

D. 9–10; A. 3–7; L. 1 [illegible]; P. [illegible]; C. 1, 6, 9, 1, 1.

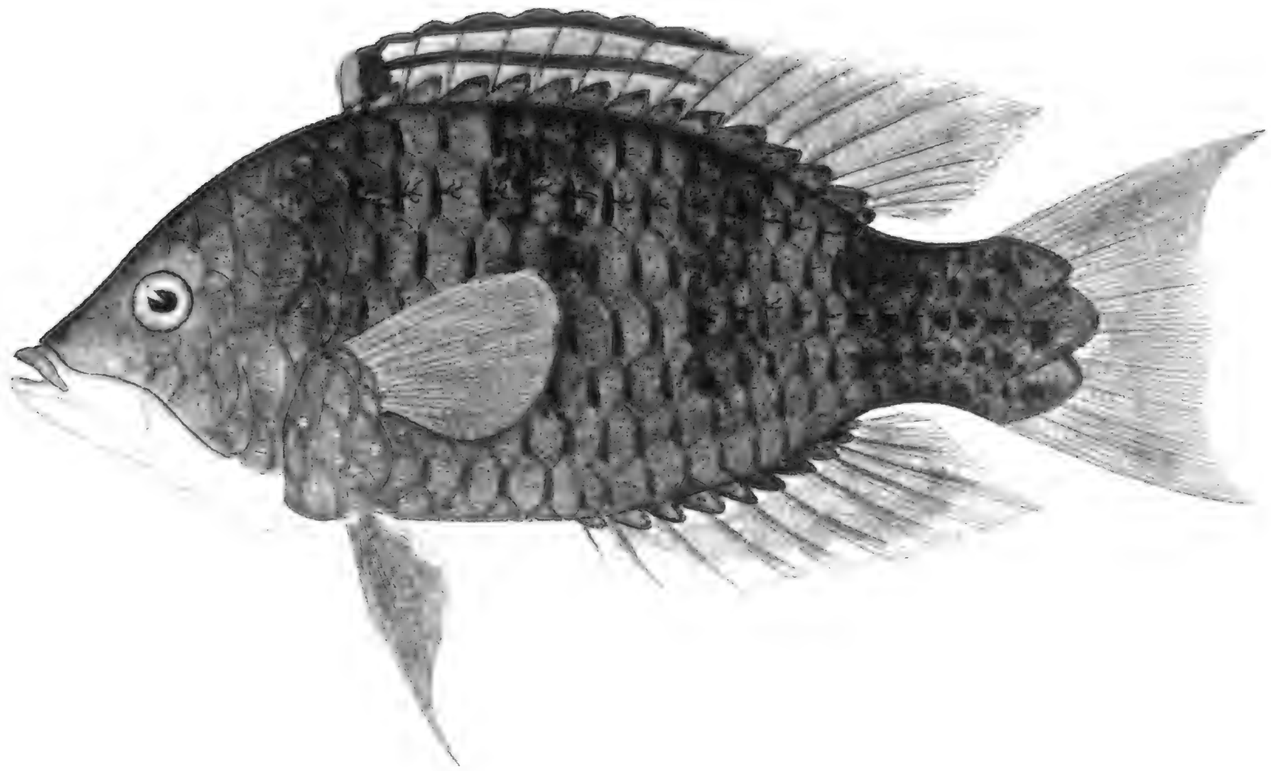
The head constitutes one seventh of the entire length. The profile is convex, the nasal region is slightly convex. The dorsal region is rather strongly arched. Eye sub-circular, its diameter being one fifth of the length of the head. There is eighteen scales in the middle longitudinal row of the body and twenty three in the course of the lateral line.

The sixth soft dorsal ray is the longest and reaches posterior to the base of the caudal. The anal passes over a base more than half that of the dorsal.

Color brownish, with obsolete, vertical, cloud-like darker broad bars. Each scale marked with a vertical linear black spot. A few bluish green round dots on the breast and the hinder lower half of the head. Lips tinged with light red. Irides olivaceous with an inner ruby red circle. Pectoral rays pale olive. All the other fins dark purple brown. The spinous portion of the dorsal is ornamented with middle, and marginal black spots, one to the interior spot, one black the other [illegible]

Length, [illegible] inches. Habitat: Society Isls.

Remarks: A single individual of this species was obtained at the island of Tahiti.

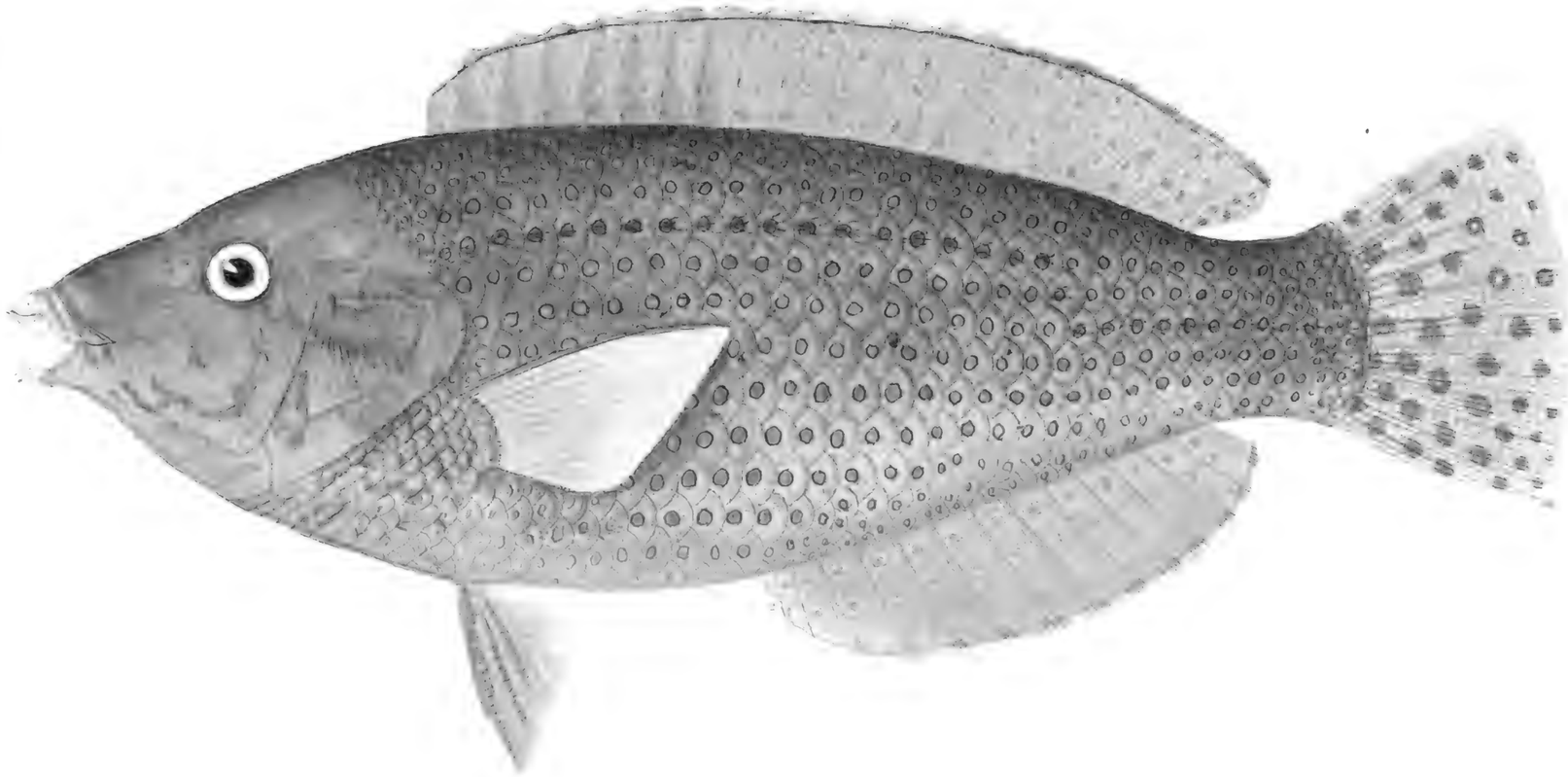


Tahiti

Chilinus incidiator

coeruleopunctatus

Chromopsis ~~[illegible]~~



Tab. CXLXVIII Anampses coeruleomaculatus

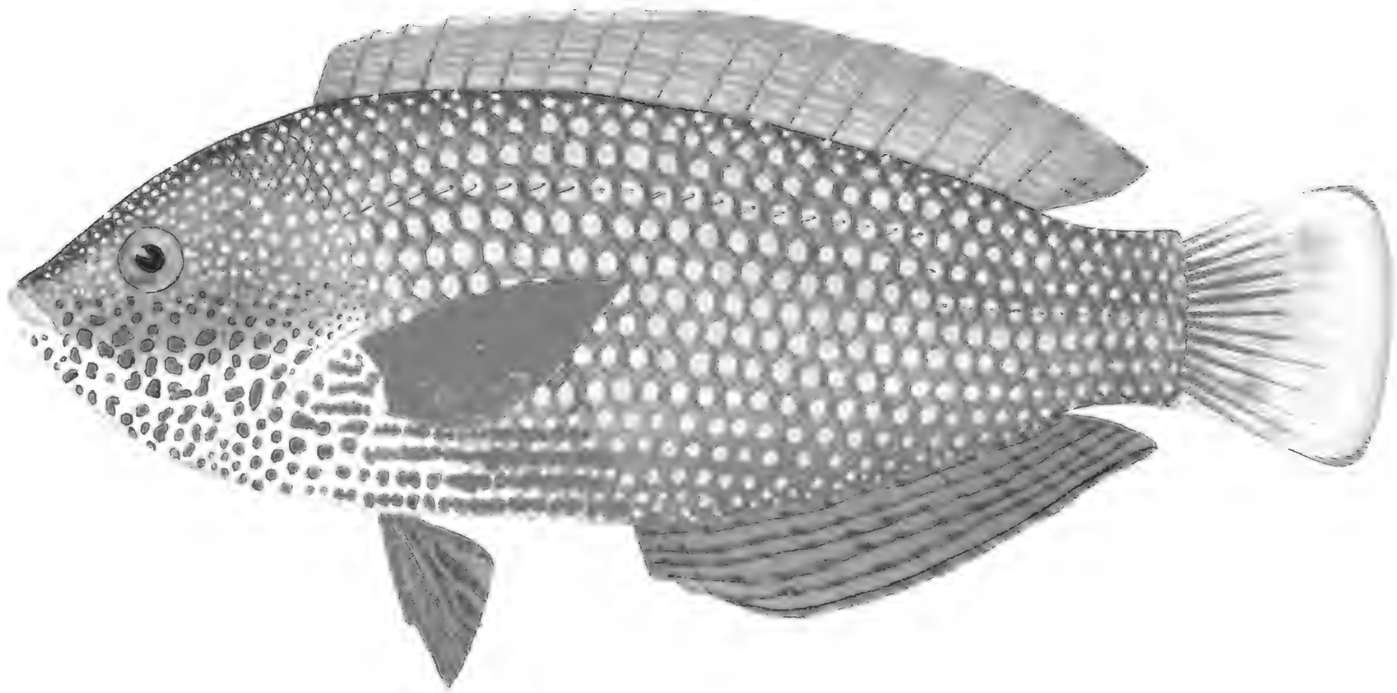


Fig. CXXXVI. Fig. A. Rhamnes cuvieri

Diatemnetus

Inscription ~~elegantissimus Goode~~

D. 7; D. 4-12; A. 3 11; V. 1-5; P. 12; L. 2. 1. 5. 5. 1. 2.

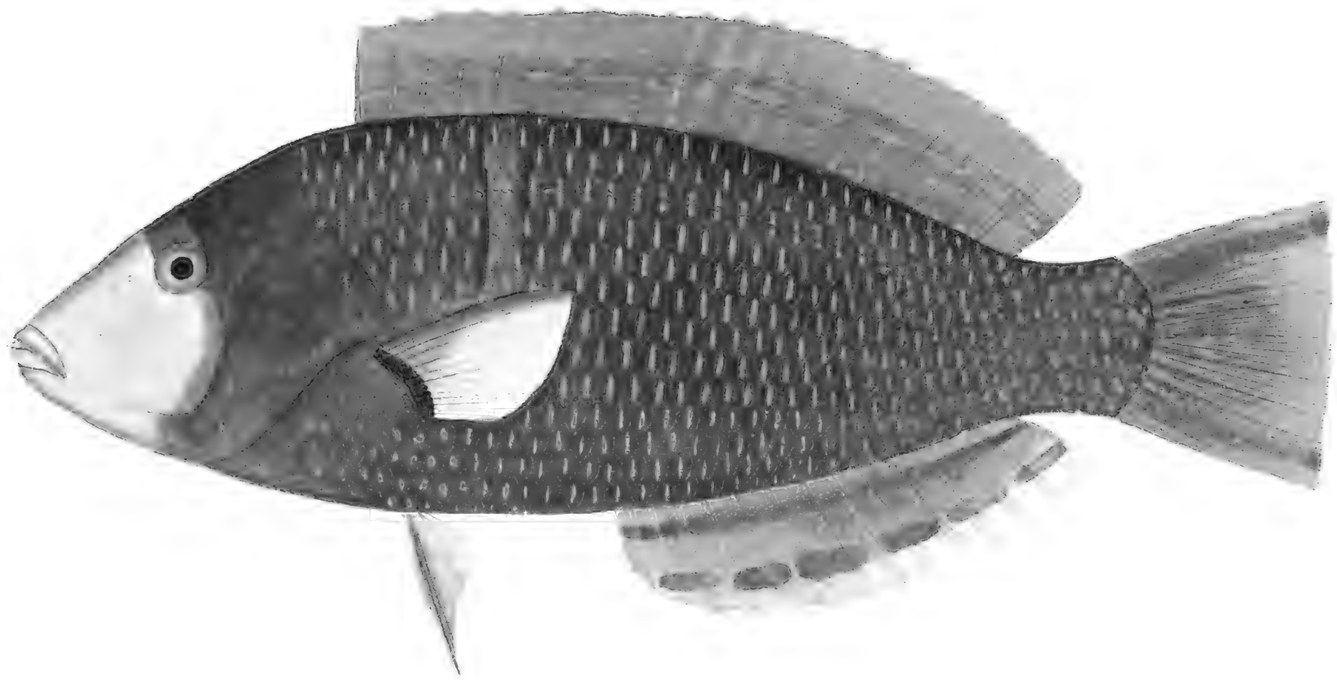
This elegant Inscription will come in the same division as O. opuntiae, but, characterized by the vertical lines on the scales and truncate caudal. The greatest depth of the body equals the length of the head which latter is a little more than one-third of the fork, caudal excluded. The eye is rather large, nearly circular, its diameter being about one-seventh of the length of the head. The caudal is abruptly truncated. The dorsal posteriorly arched. Ventrals prolonged in an acute point.

The ground color of the dead fish is dark rich bluish green. The anterior half of the head, sap green. The interocular band, and central portion of gill covers rich blue. A vertical sap green diffuse bar beneath the anterior third of the dorsal. Each scale with vertical dark margined blue line. Inside sap green. Dorsal, caudal, ventrals and anal light blue, the former traversed by a pale purple chain-like band, and the latter which is much paler outwardly, is marked with a longitudinal basal stripe, and a row of oblong spots, pale purple. Ventrals, with a submarginal purple stripe which runs parallel to the rays. Pectorals light green, becoming blue above and along the base, which is black. Caudal tinged centrally with green and traversed by two longitudinal submarginal purple [illegible]

Length, 11½ inches

Habitat. Kingsmill Isls.

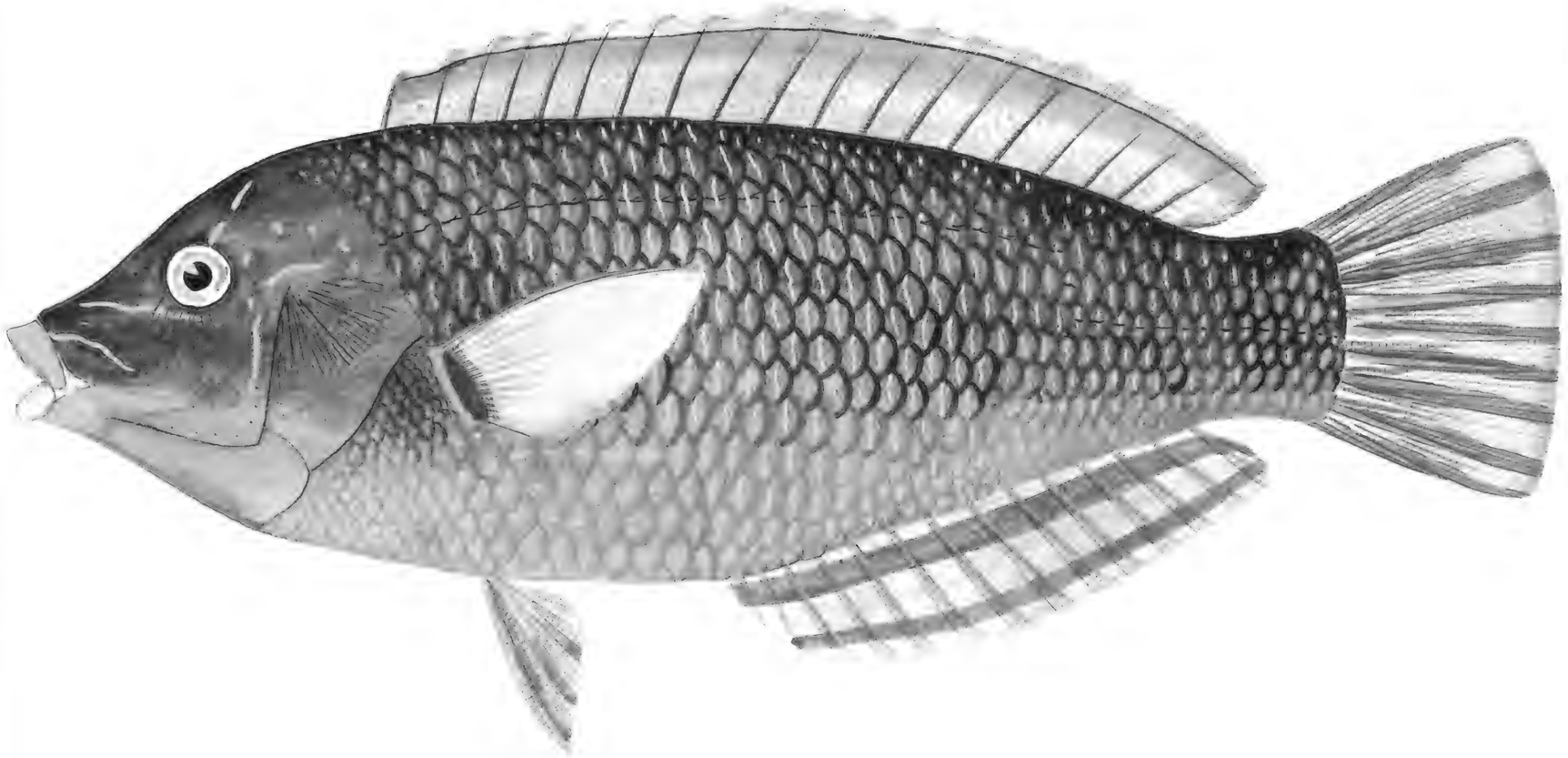
Remarks. A single specimen procured at the above group of islands. The colors were noted from a dead fish and the description, from an accurate drawing made at the same time.



Reynolds del.

Fig. 1. Acanthurus diadematus

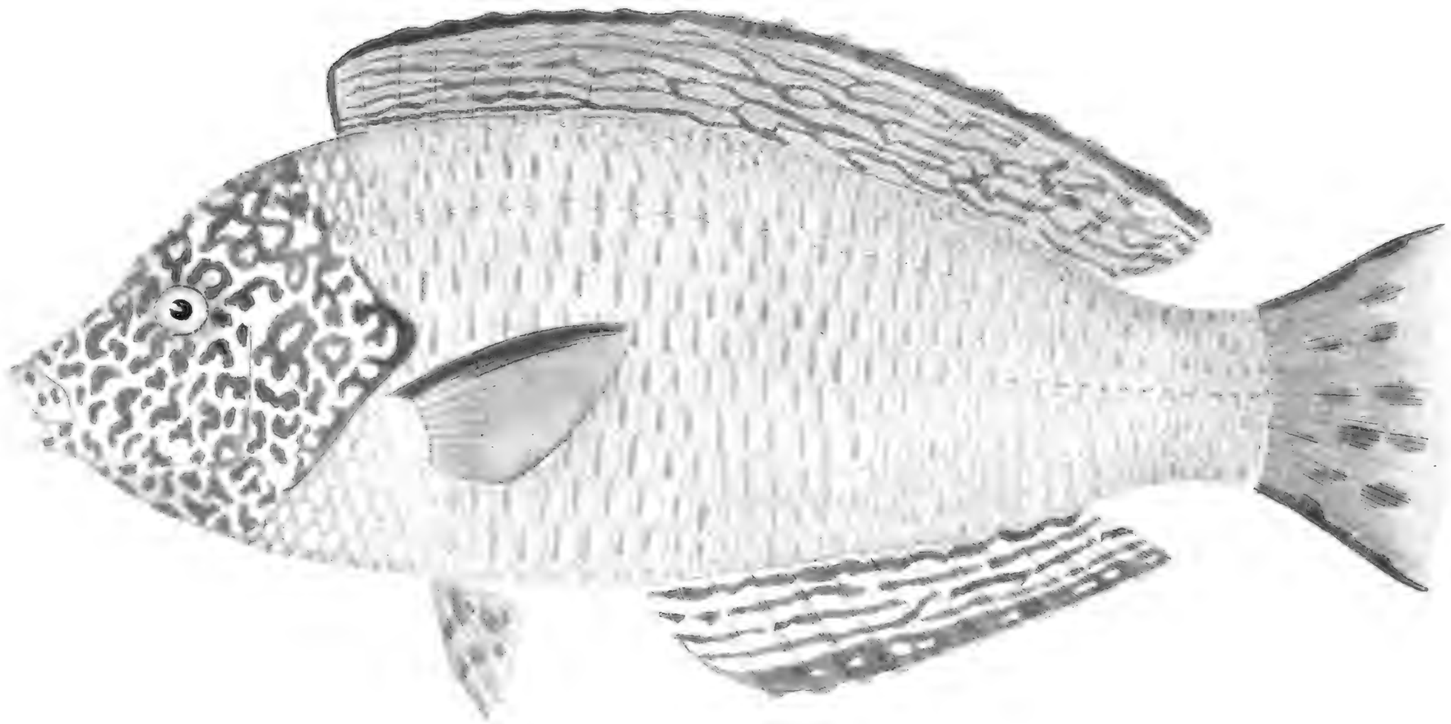
diadematus 314



Tab. 138 Iconographies Diadematus nov.

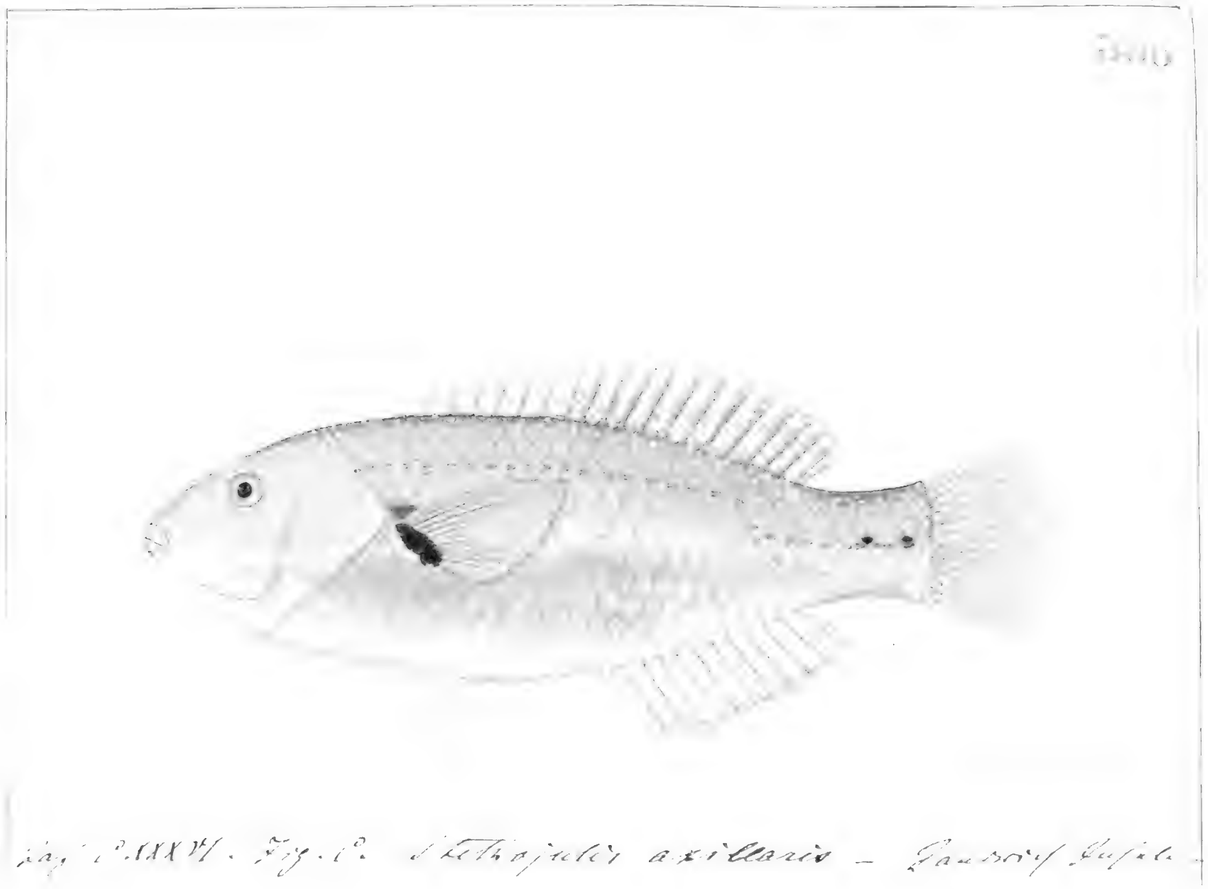
214

[illegible]



Samuel Fisher

of Cuv. Uranoscopus godeffroyi



Pag. PLXXVI. Fig. 1. Ethrojulis axillaris – Gaudry del.

castori, Shr

Mellaguda ~~[illegible]~~

[illegible]

The greatest depth of the body equals the length of the head, or a little more, and as compared to the total length of the fish is as one to four. The dorsal and ventral outlines are quite similarly arched. The eyes are of moderate size, their diameter entering six times in the length of the head.

The dorsal fin commences above the anterior base of the pectorals, is quite low anteriorly, the rays gradually increasing in height and extending over a space equal to that of the second dorsal. The anal portion is a trifle the highest, and is similar to the fin beneath. The ventrals are small, and the pectorals, together with the caudal are posteriorly concave.

Color: upper half of the body olive-brown, the lower half fish-white, the two colors separated by an irregular line, which is margined with dark-green, shading off with yellow [illegible] and extend from the head to the caudal. A broad vermilion band on the shoulder, which curves slightly downward but not extending posterior [illegible] the lateral line of the pectoral fin, it is margined above and beneath by emerald-green lines which are edged with dark green, the lower one being a continuation of the one that traverses the whole length of the body. Head yellowish-green, the lower thirsel surface white, it is ornamented by four narrow fescia of a rich light

bless, margined with dark green; (the arrangement of the fascia can be best understood by consulting the figure) sides golden, tinged with green, lower black, all the fins colorless except the dorsal which is green, spinier, and its soft portion has a colorless upper margin.

Length 5 inches.

Hab. tat. Society Isls. Kingsmill Isls.

Pa-ou by the Dantoes of the former group.

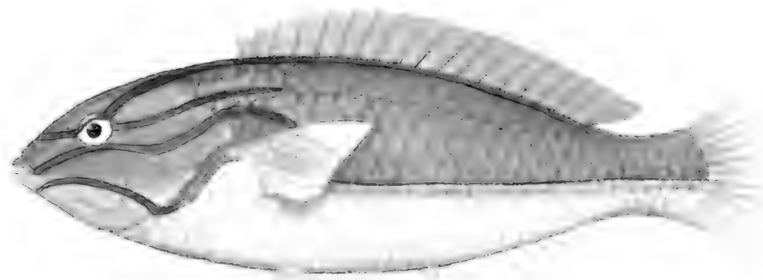


Fig. 1 Coloriert Exp.

Taf. 141. Fig. 1.

Stethojulis casturi

albomaculata, Bonnet. 1 3 192

Galiethys tuberculata, var. [illegible]

Galiethys tuberculata, var. [illegible]

[illegible]

The general shape is nearly the same [illegible] as G. [illegible] in ~~[illegible]~~ The depth of the [illegible] proportion to the entire length is in the latter species. The circular eye is in its diameter one-fifth the length of the mouth, [illegible] twenty, six or twenty-seven denes on the course of the lateral line.

The dorsal commences a little posterior to the inner corner of the operculum, it has [illegible] divided in the two portions, the first portion the longest, and depressed [illegible] the second portion [illegible] the first [illegible] the anal is slightly deeper than the dorsal, depressed [illegible] from the first [illegible] rays, [illegible] terminating with that fin. The ventrals [illegible] the bells do not reach the anal by more than their own length. The pectoral are longer and [illegible] as the ventrals. The caudal convex [illegible] pointed.

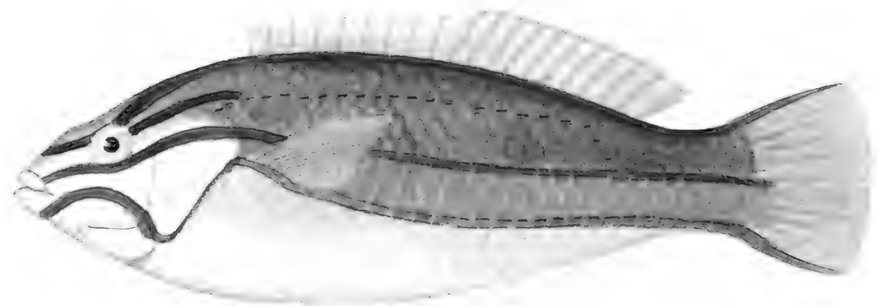
Color [illegible] dark green, [illegible] the upper half of the body, [illegible] rays [illegible] with [illegible] from the [illegible] to the [illegible] line

[illegible] the [illegible] branchial rays [illegible] spinous [illegible]

[illegible]

[illegible]

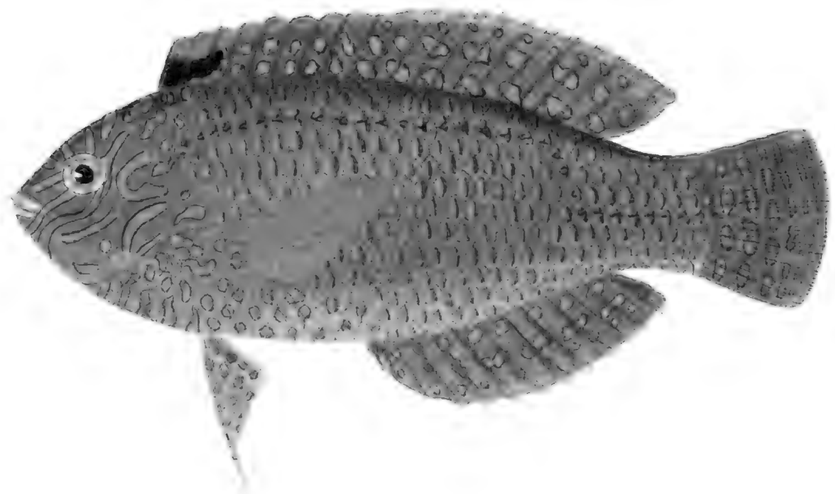
(Observations [illegible]
are at the [illegible] not only
[illegible] one [illegible] or the [illegible] of
[illegible] and the [illegible] in the [illegible] of [illegible]
are both in [illegible] [illegible]
[illegible] with [illegible]
[illegible]
[illegible] their [illegible]
at the [illegible]
as in the former [illegible]
[illegible] to [illegible]
and [illegible] what [illegible]
figure is [illegible]
place in [illegible].



Lauzeiff del.

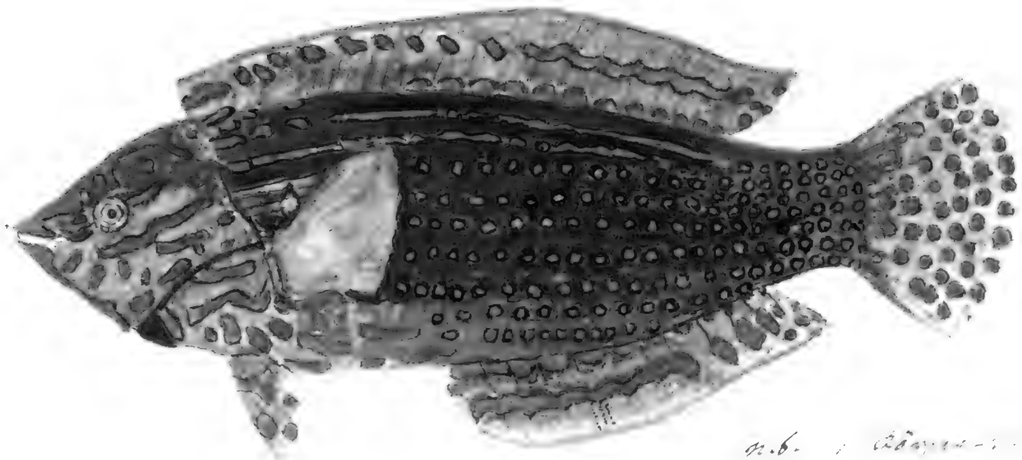
Def. 141. Fig. 13
Tetrodon albovittata

193



Macropharyngodon [illegible]
Nat. Fig.

193



n.b. [illegible] an auf jeder Schuppe
Pyramiden Stück über Axil
Flossen olivaceo-farbig.

Macrostharyngodon meleagris
(Ref. Fig.)

Sale
Siaqiti
[illegible]
Samoa

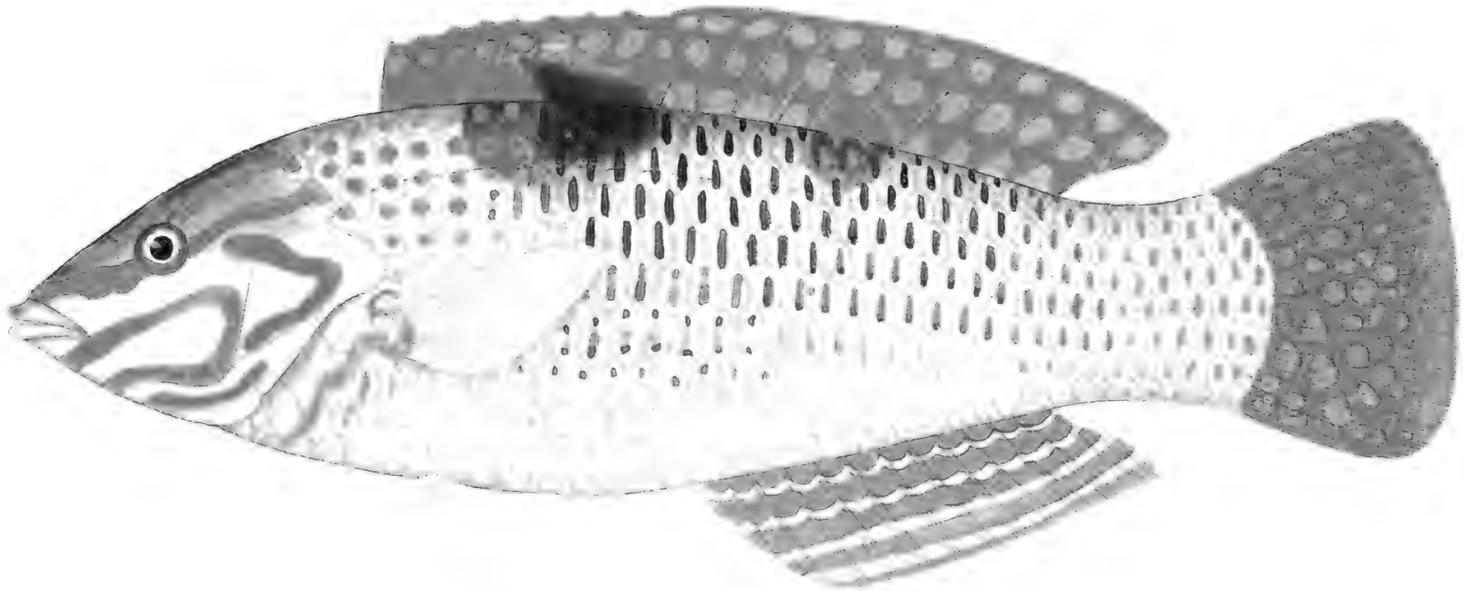
[illegible]

[illegible] 5, 6, 1, 60, 12

[illegible] of the tail equal about one-[illegible] of the total length of the fish. All upper and lower profiles are regular and in the outline of the body, which is rather fusiform, [illegible] excluding the caudal fin, [illegible] times in the length of head. The [illegible] lanceolate shape in their intersections. The [illegible] of the dorsal line is simple.

The dorsal fin is [illegible] nearly at the first [illegible] branched branch, [illegible] expanded slightly, contrary that commence opposite to the second one of the anal fin. The dorsal and abdominal fins are [illegible] centrical accumulated fin-rays.

Color [illegible] [illegible] speckled [illegible] upper part of head light olive, [illegible] in the green yellow beneath. A [illegible] rich dark olive green, [illegible] beneath and the belly, black. [illegible] light dark green, [illegible] with an oblong vertical [illegible]



Platyglossus hortulanus

Canada

July 16th 1877

[illegible] specimen
[illegible] in this species [illegible]
[illegible] the [illegible] the
[illegible] is [illegible] in shape, but it
posseses [illegible] just midway between the
end of the snout and the hinder [illegible]
[illegible] the height of the body is
slightly more than in fish of the same
[illegible] total length. [illegible]
[illegible] the dorsal fin commences in advance of the
hinder corner of the operculum, just
[illegible] a line just behind the vertical axis
of the fish. It is made up of [illegible] rays
[illegible] of the commencement of the soft portion.
The anal fin is also [illegible] and is
[illegible] as the soft dorsal, the latter large
rays being very prominent. The caudal
is [illegible], [illegible] [illegible] expanded.

Colors and markings somewhat
variable. The ground color is light green
passing into light blue beneath and
shade the lower part of the head to a
bluish green. The whole body except the
breast and abdomen is marked by [illegible]
[illegible] with [illegible] [illegible]
[illegible], which [illegible] [illegible] [illegible] [illegible]
irregular bands of [illegible] [illegible]
with the [illegible] the [illegible] of a
copper red and [illegible] [illegible] the [illegible]
which we have [illegible] [illegible] [illegible]
along the upper half of the body, being
nearly uniform [illegible] [illegible] the
scales more or less [illegible] [illegible]
with blue. A lighter and [illegible] [illegible]

[illegible] the pectoral fins, the head is ornamented [illegible] with light blue. (which [illegible] of the fish can be best understood [illegible] the figures which is an exact [illegible] from the original fish) Besides light green the [illegible] fins are of an amber red, the [illegible] marginal with light red [illegible] irregular spots which are disposed in the longitudinal rows, the upper [illegible] the lower ones being [illegible] obliquely [illegible] large black spot marks the middle of the fins and sometimes a smaller one may be seen anteriorly. The anal fin is deep red with a median longitudinal band which breaks up in spots posteriorly. The spots on the basal portion are to be red with light blue margin. The [illegible] with the anterior [illegible] the basal nearly colorless [illegible] with [illegible] spots.

[illegible] with the [illegible]

[illegible] and King [illegible]

[illegible]

Epinephelus [illegible] (Lap. 42 Gig. Ref.)

199

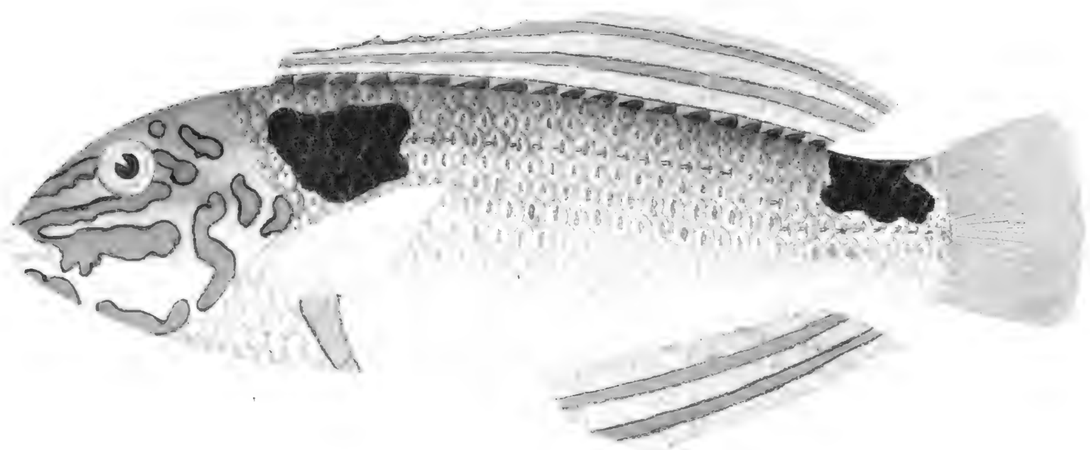
Platyglossus vicinus, Ptx

Julis [illegible]

D. 9 11; A. 3 11; V. 1 5; P. 13; C. 2, 1, 6, 6, 1, 2

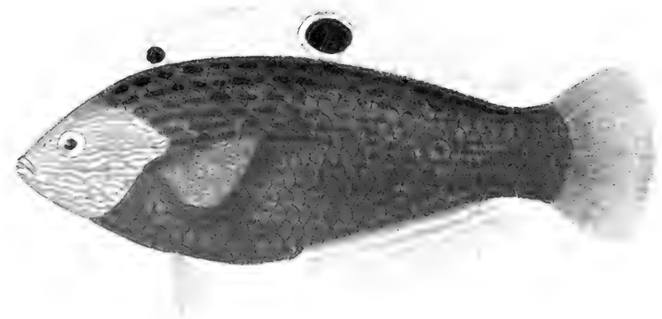
The head compressed & little more than a fourth of the whole length; the greatest depth hence about the same proportion to the length. The large eyes are somewhat more than their diameter apart, & are contained three times in the length of side of head. The lateral line follows the simple bend of back.

The dorsal fin forms nearly a lozenge equal to half the total length of the fish, and rises in the hollow from the first soft ray. Caudal truncate, the shape of the soft dorsal but a little shorter in its base. The ventrals are long, acute, pointed, & are marked pale; generally green grading into bluish white beneath. Throat and under part of head pale lemon yellow, each scale on the green ground of the back with a small vertical oblong spot, sometimes forming a large black spot over the pectorals and a second nearly over the upper half of the caudal trunk, which is in some examples blue-black, & prolonged along margins with blue, often bounded and backward from the pectoral axilla.



Cantigerus [illegible]
(Supra 142 Fig. C.

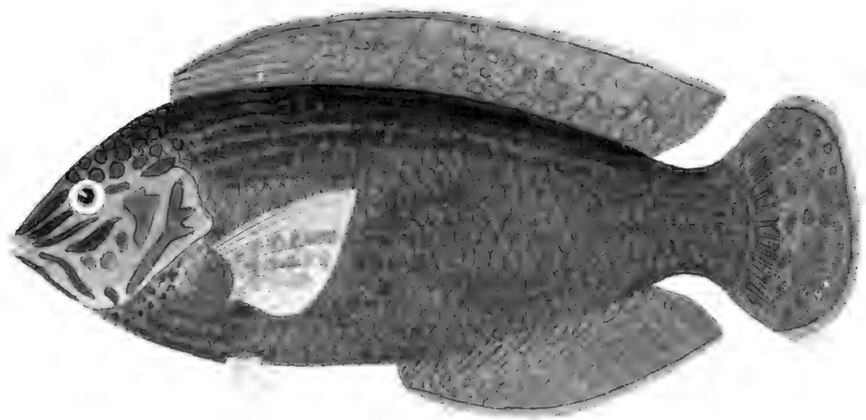
178



Ostracion solorensis (Bleeker 42 Fig. 1)

194

marginatus



Labrygnathus marginatus

Julis ornatissimus, Garett.

Julis ornatissimus, Garett. Pr. Cal. Acad. Nat. Sci. Phila. p. [illegible].

D. 9/12; A. 3/11; P. [illegible]; L. l. [illegible], t. [illegible], b. [illegible], l. [illegible].

The greatest depth of the body is compared to the total length is one to four. The head comprises a fourth of the fish. The diameter of the eye enters five times in the length of the head. A little canine-like tooth projects laterally from the hinder end of the branches of the upper jaw. The dorsal fin commences in advance of the tip of the opercular flap and tapers either way from the first branched ray. The anal is more than half the length of the dorsal. Dorsal convexly rounded. The ventrals have their first a little later ray prolonged into a filament.

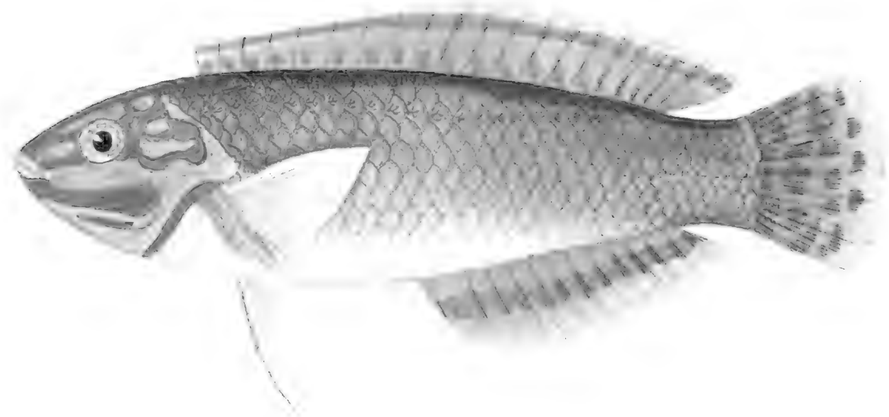
Body greenish, becoming bluish-white beneath. Scales margined with rose-red. Immediately in advance of the pectoral base are two strong rose-red streaks enclosing a blue one. Sometimes there are three streaks of blue or orange al-

terminately with the red color. The head is of a fine green or emerald color, ornamented by formations in a curved shape and articulation which can be best understood by consulting the figure. Side golden-yellow, vertical fins narrow, margined with light blue. The upper half of the dorsal fins is a yellowish green stripe and the lower half is occupied by a single row of the same color spots. A band along the middle of the anal, and numerous spots on the caudal yellowish-green. All the bands and spots on the fins and head are edged with blue. Ventrals and pectorals yellow, the latter edged in front with blue.

Length, 5 inches.

Habitat Sandwich Is.

Remarks.—Since I published the first description of this species I have obtained a second specimen which was five inches in length. It differed somewhat in color and markings, but can always be determined by the narrow scales, narrow vertical fins, and peculiar markings on the head.



Platyglossus ornatissimus
(Taf. 141 Fig. C.)

Fois veneta

Gulf [illegible]

B. [illegible] Pomatomus saltatrix

This elegant species is [illegible] under, the greatest depth of the body is equal to one fifth of the total length. Caudal extended in the median line. The head compressed at a [illegible] point. The eyes are nearly circular, their greatest diameter enters nearly four times in the length of the head. The [illegible] in the lateral line are simple and may be traced over about 70 scales.

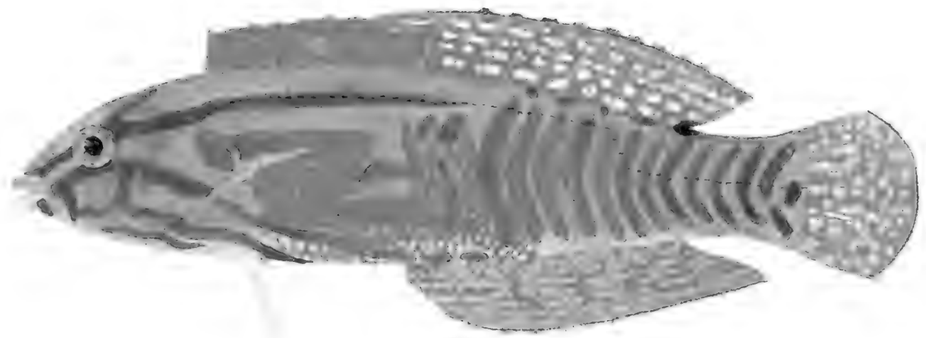
The anal fin takes its origin a little in advance of the perpendicular which passes over a back little more than half the whole length of the fish. The soft fin is a trifle longer and [illegible] the spinous part.

The anal fin commences at a point corresponding to the first articulate branch of the caudal, and equals depth in length to that part of the fin alone.

The ventrals have the outer edge of each prolonged into an internal point, which when laid back reaches as far as the anal fin.

The caudal is forked with the angles rounded off.

Colors. The fin on the back and caudal brownish, the last darkest towards the tips. Under surface of the body is a fine rose color, fading beneath, passing into pale [illegible] or pinkish [illegible] the vertical fins. A vertical deep green mark in the bottom stripes marks the lower



also on note
Tab. 144. Fig. 1.

Coris venusta

197

Coris venusta

Culis [illegible]

[illegible]

The general aspect of this species, except in color is closely allied to No 19. The greatest depth is equal to the entire length to the base. The [illegible] is more elevated than the [illegible]. The head is more pointed than [illegible] about the front of the [illegible] fish.

The ground color of the head and body is a rich orange yellow variously marked with [illegible] which are arranged mostly lengthwise on the anterior half of the [illegible] pectoral. The posterior bands are slight crescentic parallel and their concave margins posterior. The anterior stripe is irregular, more or less broken, and [illegible] other on the cheeks and blue spots near the opercle flap. [illegible] yellow. All the vertical fins are orange red, and the pectoral have light [illegible] The spinous portion of the dorsal is banded by two darker [illegible] the soft portion is maculated with [illegible] blue spots. The [illegible] are [illegible] orange red, [illegible] the soft dorsal, the upper and lower portions are [illegible] with a single black line [illegible] the ground color of the fins [illegible] is [illegible] the long hair-like bands of violet and the [illegible] same hue. Both anal and soft dorsal edged with black, [illegible] their anterior [illegible] orange.

Length 6 inches

Hab. Sandwich Isl.

Native name Ortilolo (Rare)

? calchrima

Tanagrinis [illegible]

[illegible] green [illegible] and belly, the former have profusely mottled with small rounded light green spots on terminal and rich blue [illegible], where they are larger. Head varied [illegible] on the cheek and the [illegible] colored stripe radiate posteriorly from the orbit, the upper the longer. [illegible] with red and green. The lower [illegible] is yellow, commencing along its base, the anterior filament red, and the upper half of the soft portion and half of the spinous is tinged by a wide black band enclosing two blue stripes. The lower half of the soft portion is dusky in the blue. The basal half of the anal is rich light orange [illegible] with blue and green and the lower half is deep black and [illegible] to the soft dorsal. Caudal yellow [illegible] above and beneath with [illegible] brown black [illegible], the blue [illegible] change in the posterior portion. Pectorals pale pink on the outer [illegible]

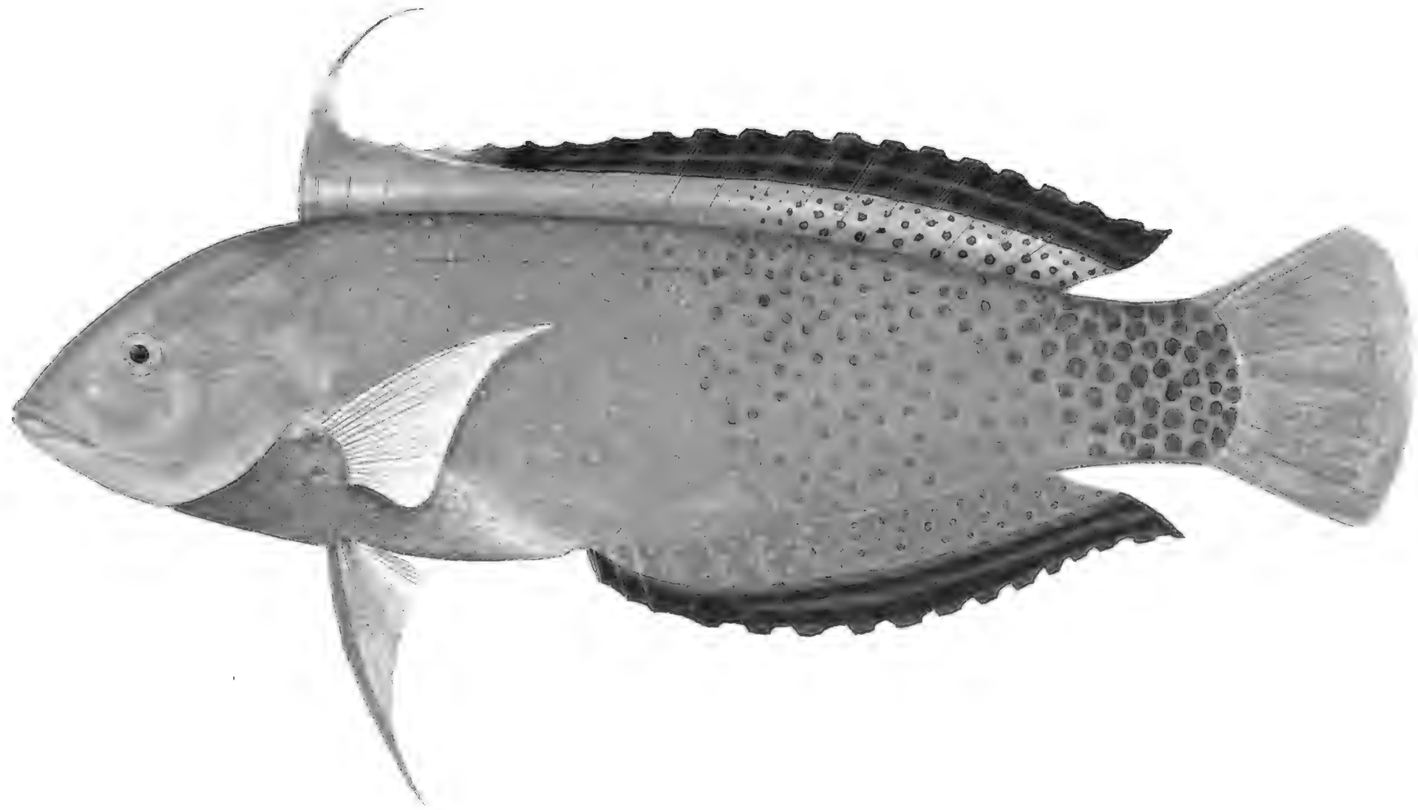
Their color on upper surface which is adorned with a green luminous spot.

[illegible] depth which is over the abdomen is about a fourth of the total length of the fish and a little more than the length of the head. The eyes are small and concentric, enclosing about seven times in the length of snout. The shape and relative proportions of the fins can be seen in the drawing.

Length 10 inches.

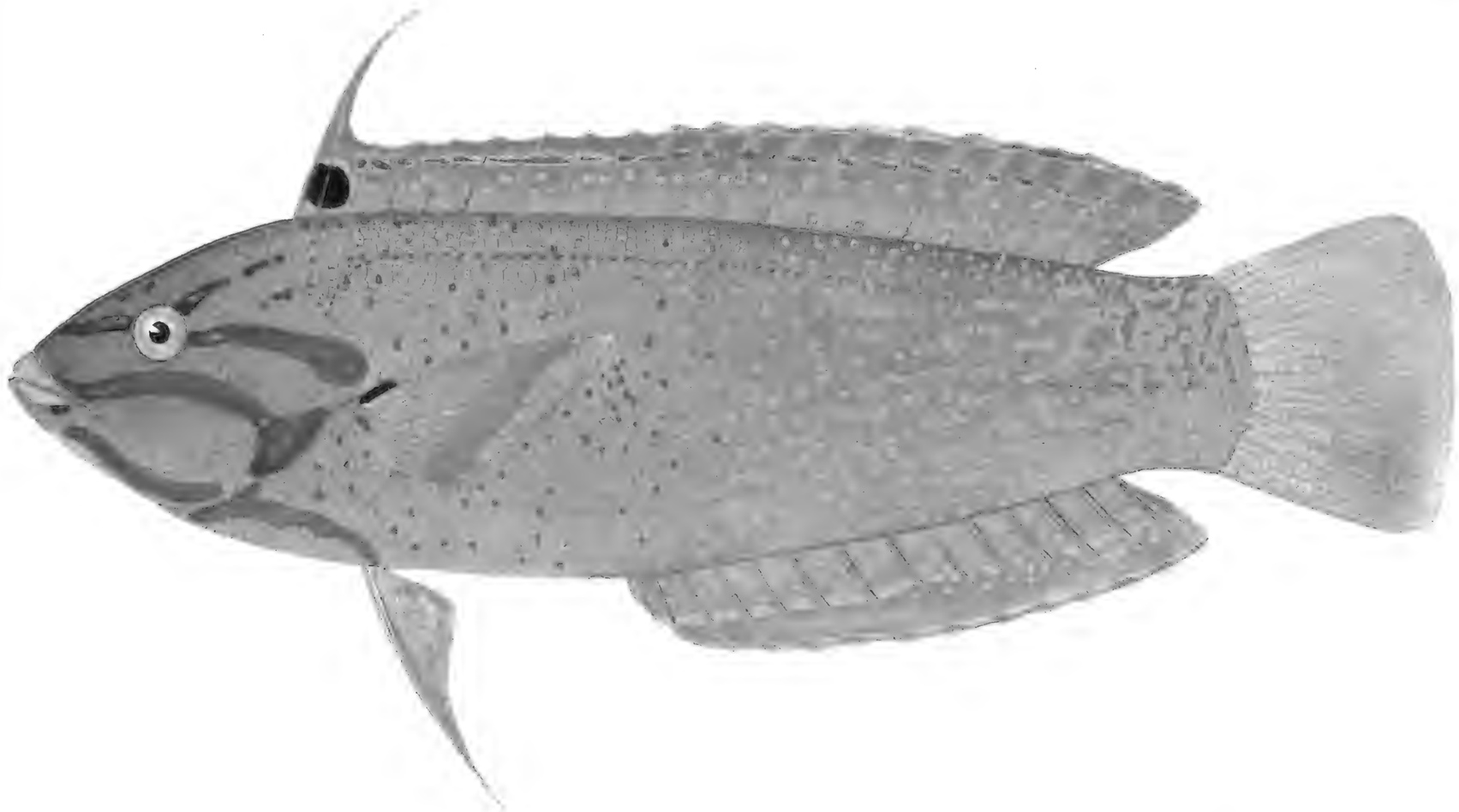
Hab. Sandwich Isls.

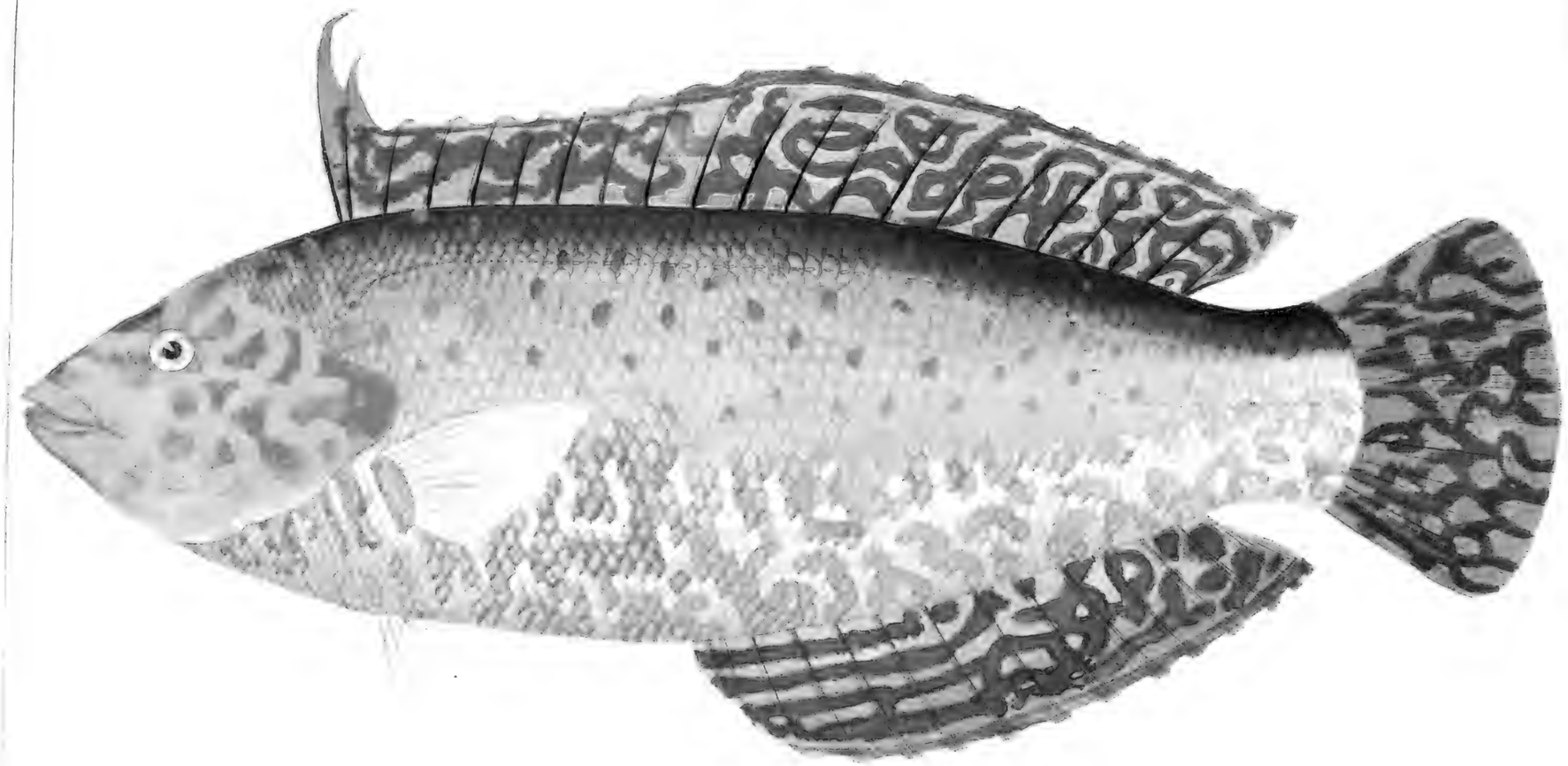
Only a single example was obtained at the island of Hawaii.



? Lutris sulcatissima

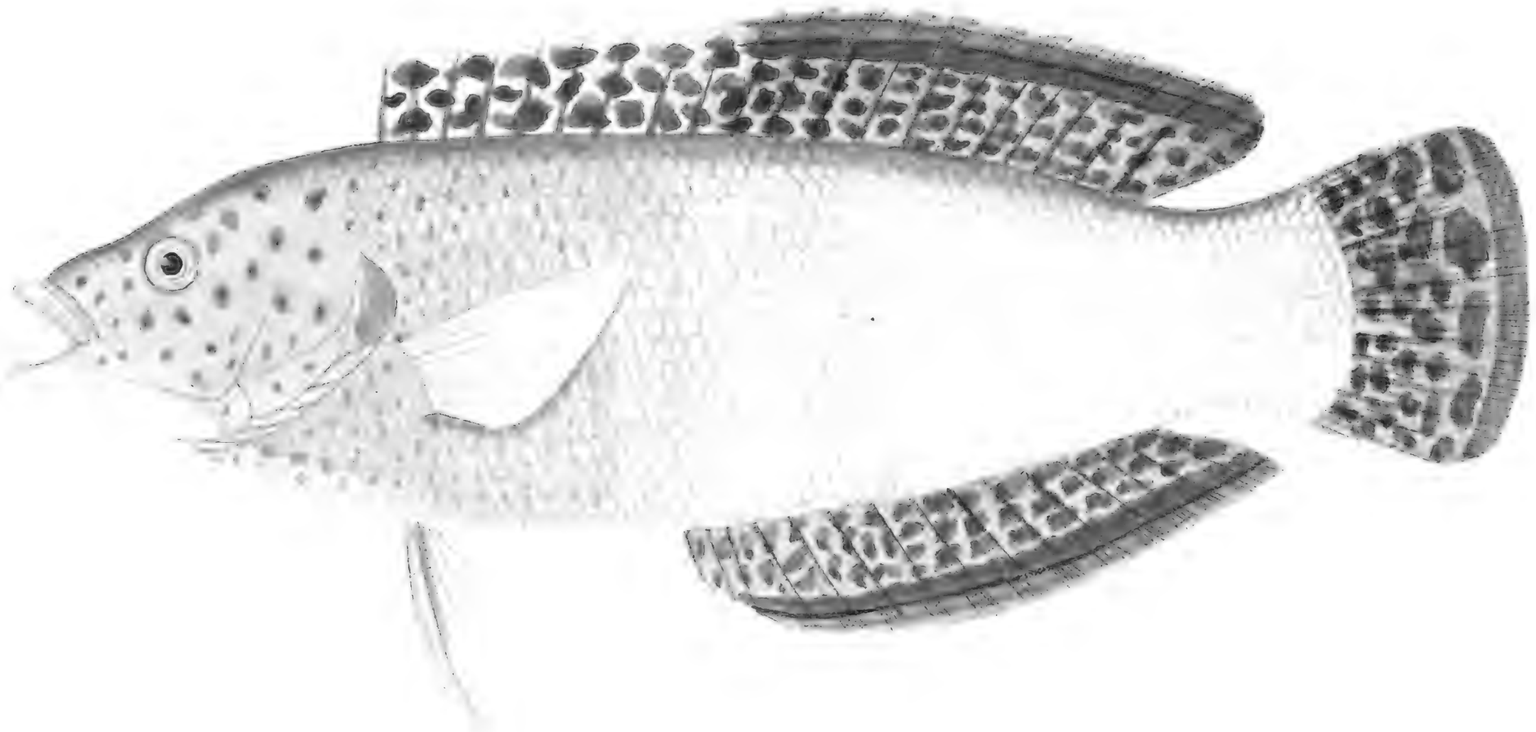
? pulcherrima





Loris cingulum

401
322



Genyodes smith
(genus Lepidodes Westwood)

[illegible]

[illegible] the head is comparatively small, the proportion being [illegible] with the [illegible] of the [illegible] the [illegible] face [illegible] margin which is [illegible] off at the angle. [illegible] the [illegible] [illegible] but [illegible] [illegible] and [illegible] the thoracic segments [illegible] the [illegible] and pectorals [illegible] the [illegible] [illegible] the latter, [illegible] and [illegible].

Genyodes annulatus
~~Lepidodes~~ Westw.

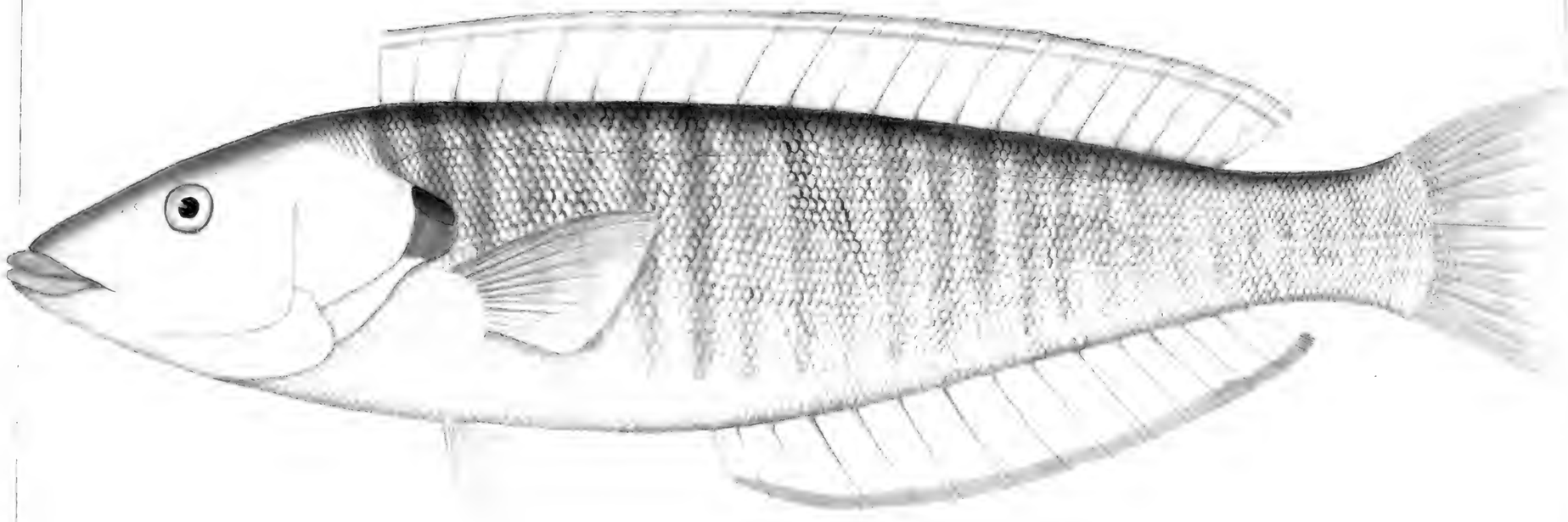
Sub-Dig. Pleurosphenoid, t. 3, b, b, 3.

The head compared to about half-breadth of the entire length of the fish, the height of the body is much less than the length of the head, or about one-fifth of the total length, and the thickness falls short of half the depth. The dorsal and ventral spines are nearly similarly placed. The eyes are sub-circular, their greatest diameter entering nine times in the length of the head, and are [illegible] of the snout than the hind [illegible] termination of the opercular flap.

The dorsal fin commences [illegible] in advance of the opercular flap and extends [illegible]

185

323



Cossyphus mucronatus (♀?)
Ewright. del.

annulatus

Lampides [illegible] #24

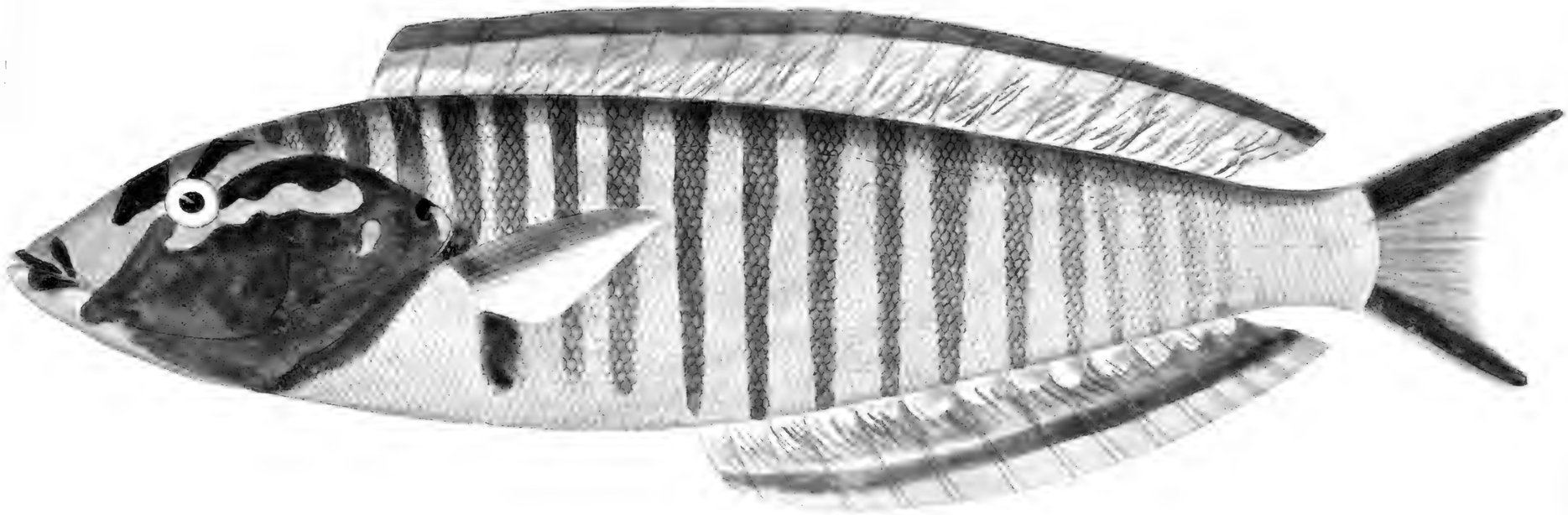
[illegible]

The thorax is very light green and thickly clothed with light violet. It seems not to have passed from the chrysalis [illegible] the head is covered with dark violet and bril[illegible] green in other respects green. A yellow spot behind the posterior flap. Under surface yellow.

The abdomen is covered green along the back with a broad purple band in the marginal dusky purple band is yellow along the lower margin. The [illegible] is broad yellow with the [illegible] purple state.

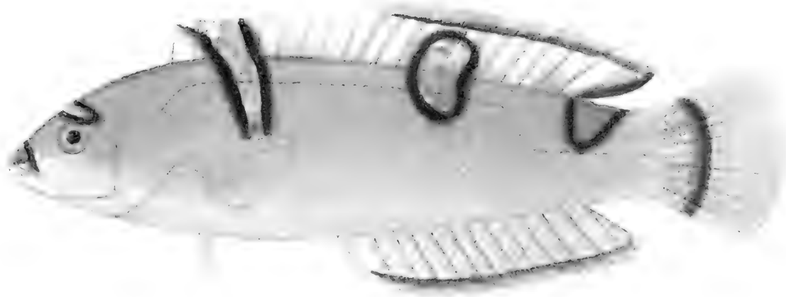
The anal pair is similar, colored as the abdomen but with the inner marginal purple band is wanting. In a middle green horizontal pale yellow green. The fringe is green [illegible] state, brown and pale yellow [illegible] band. Black green becoming pale green in outer third. Upper surface [illegible] partions with a wide purple state band.

Length [illegible] mm.
Hab. [illegible]



Sparis annulatus

caudal,



Cossyphus pleurostictus

188

Lorio clandestina
Cuv.

Genus Chelidi, [illegible].

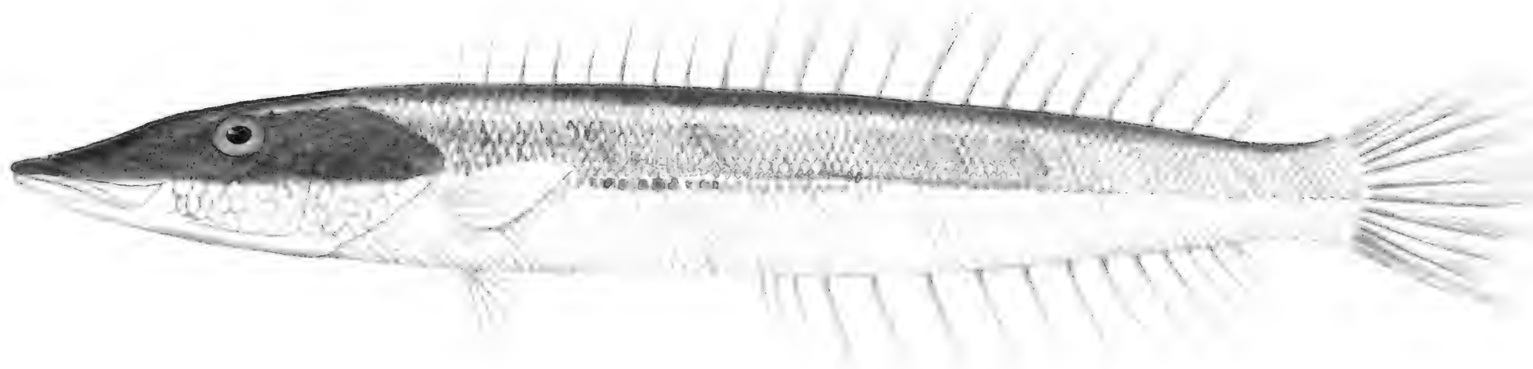
[illegible]

Cheilio hemichrysos.

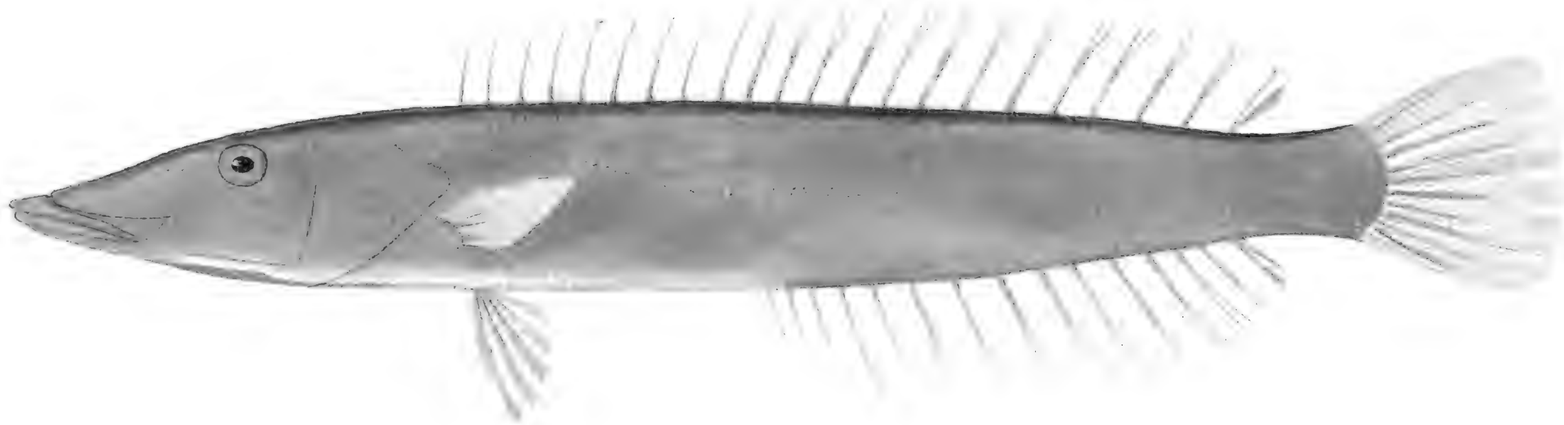
Cheilio hemichrysos, [illegible] Hist. nat. [illegible]
[illegible] p. 51
Cheilio annulatus, [illegible] p. 74
[illegible]
Cheilio hemichrysos, [illegible]
[illegible] p. 37
[illegible]

The general aspect of the [illegible] is [illegible] similar, with [illegible] [illegible] [illegible] fine, and [illegible] pink [illegible] [illegible] [illegible] horizontally [illegible] being one [illegible] The lateral [illegible] fairly eight scales.

[illegible]



Cheilio inermis



Cheilio inermis

Chetilia unimaculata, gen. et sp. n.

B. 6; D. 9-12; A. 11; L. 15; P. 11; V. 1, 6, 6, 1.

The body tapers from the base of the head, where its depth equals nearly ⅙ of the total length of the fish. The head comprises one-third of the entire length, caudal excluded. The hinder lip of the maxillary reaches the posterior nasal opening. The upper profile of the head is nearly straight. The eye is obliquely oval, inserted quite near the upper line of the head; its length being, as compared to that of the head, two to twenty-one. There are ~~about~~ twenty-two rows of scales between the dorsal fin and the twenty-and-forty-seven in the course of the lateral line. ~~Teeth simple.~~

A line dropped from the origin of the dorsal fin touches the hinder corner of opercular flap, passes behind the base of the pectoral and ventrals. It extends over a base half the length of the fish. It spreads almost imperceptibly either way from the first branches rays, which latter are divided two or three times. The anal is a little longer than the articulated portion of the dorsal and approaches rather nearer to the caudal than that fin. The small ventrals are placed immediately beneath the pectorals and at the dorsal rounded.

Color, of the dead fish green in the land color, olive and bluish black. Scales margined with dull yellow and an inframarginal ocher yellow linear spot. Just posterior to the Opercular Pectoral may be seen a diffuse bluish spot

and there are four small carmine spots. Head olive purple beneath. A small black spot in front of each eye and a black line from below the angle of the mouth. Back olive with yellow. The dorsal fin is black edged with white. Anal deep black, with a stripe of pale colour. Dual steel blue, with deep blue series of circular rings, shot under pale sea. The other is [illegible].

Length 6 to 8 inches.

Habitat: Lovely Lake Sandwich Isles.

Remarks—All the former group the popular name is "Ta-o-fe". The specimen obtained at the latter group differed somewhat in colour from the Tahiti specimens, as seen in ~~the colour~~ ~~drawing~~ in the colour [illegible] the [illegible] are [illegible].

Cheilio

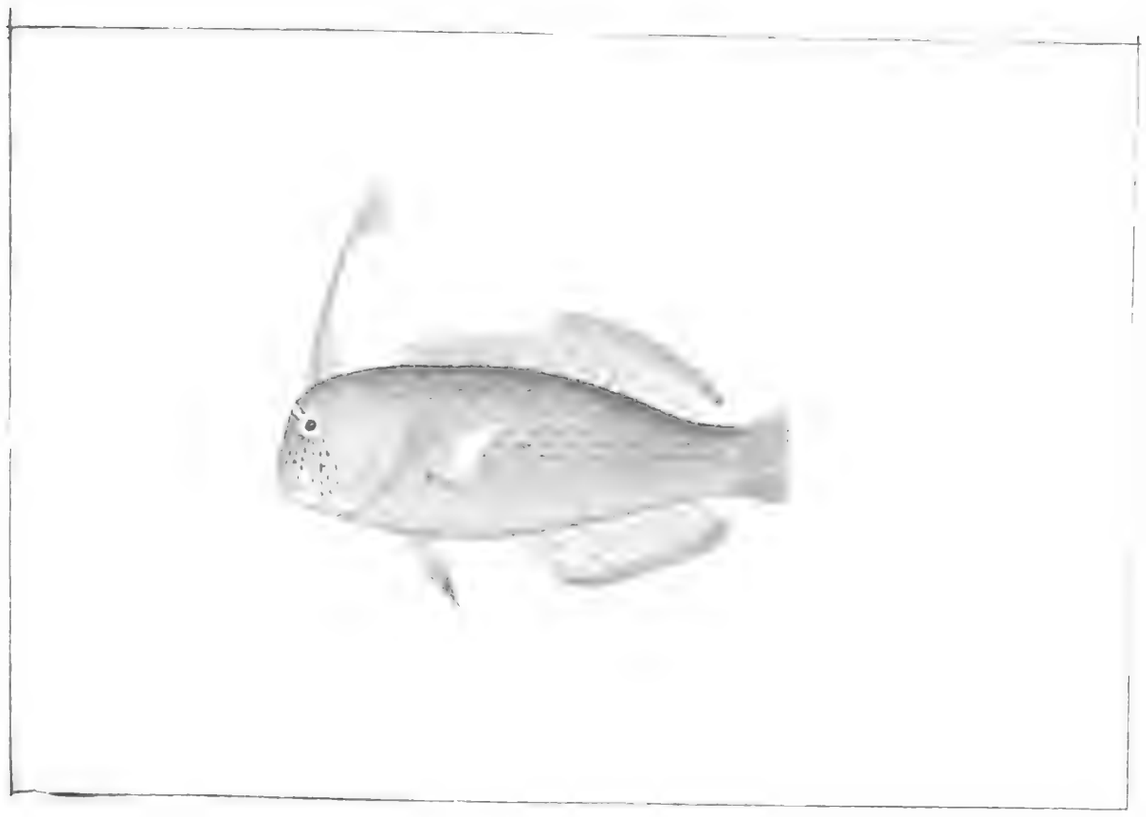
Lutroides p. 330

Color light brown, with longitudinal series of rolling dark spots on each series of scales. Irides silvery yellow. Interocular band silvery-white, margined with deep brown, radiating bottle brown lines beneath the eyes. Fins the same color as the body, becoming darker outwardly. The upper portion of the spinal dorsal whitish, and the hinder third of the caudal colorless.

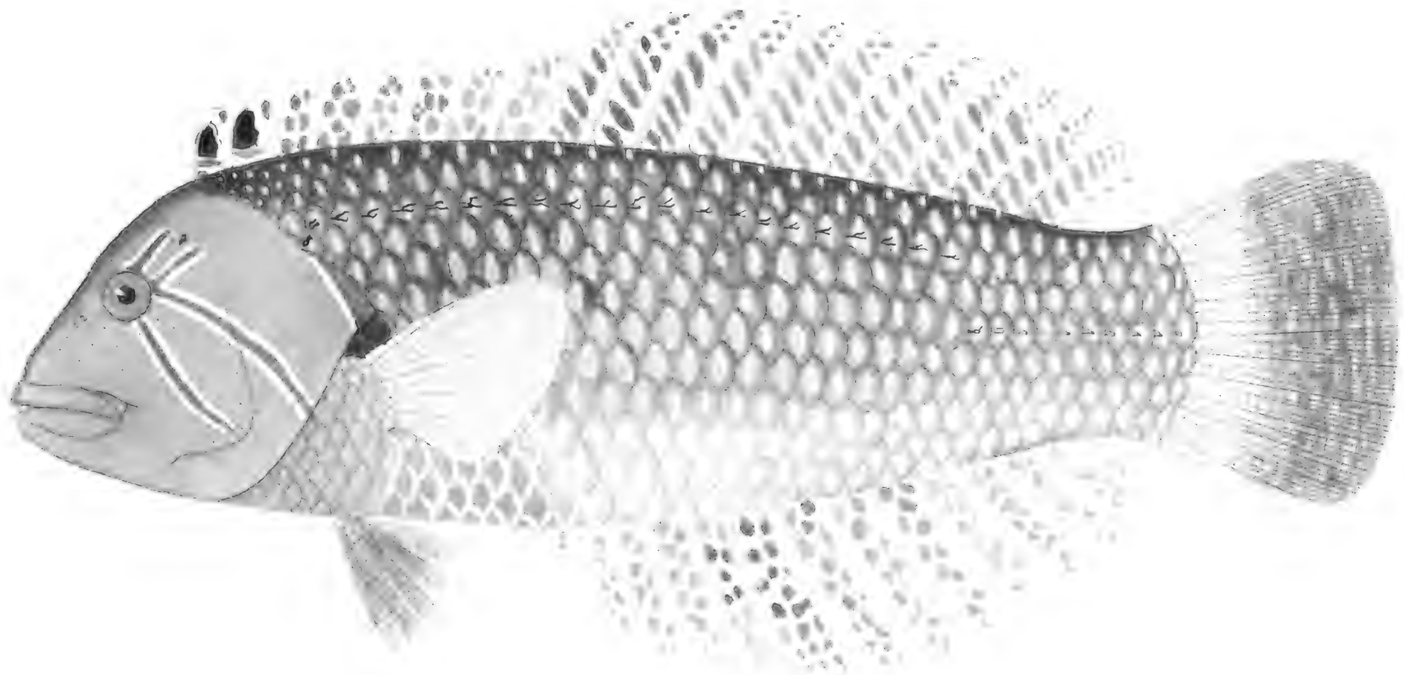
As I unfortunately packed away the specimen before drawing up a detailed description, I can only send the unfinished drawing and colors.

The specimen is the only example I ever saw, and was obtained in Dutch Islands, in January 1872.

4



Novacula



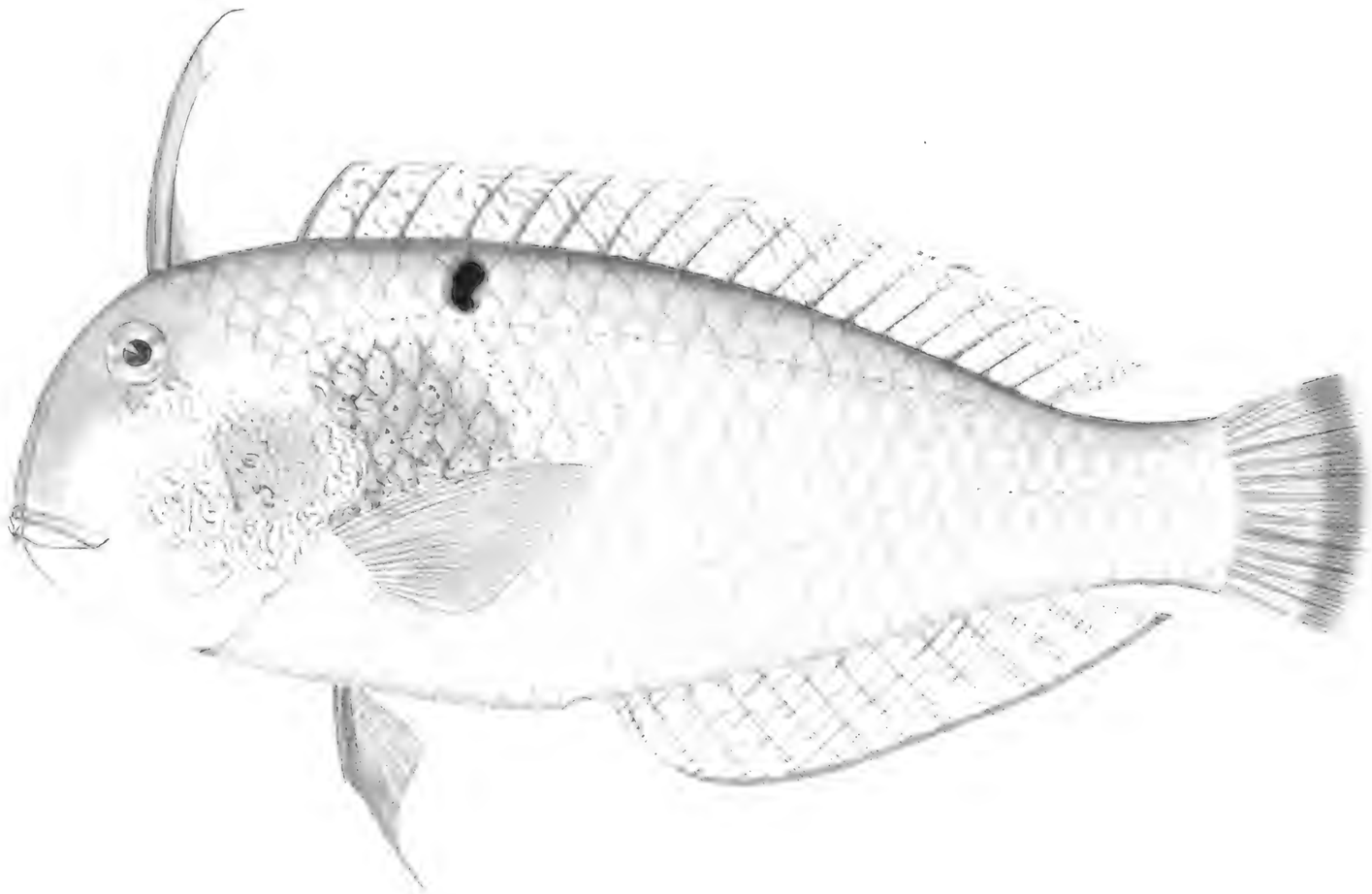
Terpsichore tauricus

Kirichthys [illegible]

[illegible] A specimen of this species has been lent to me by Mr. Tufnell. It was taken before the Sandwich Islands, and measures 22 inches in length.

The general shape is elongated, compressed, the greatest depth of the body, equal to one third the total length. The head is vertical, nearly as long as the body, and compressed nearly a fourth of the fish. The eye is small, circular, its diameter one sixth the length of the head. Teeth minute, disposed in a single range in either jaw, and the two anterior are larger, conical and projecting. The large scales are smooth, disposed in 12 horizontal rows on the median line and 7 rows on the back of the tail. The lateral line consists of simple tubes which pass over 2 scales to the interruption beneath the hinder part of the dorsal and it is broken again in commences again in the median line.

The first dorsal ~~[illegible]~~ arises a little posterior to the eye and consists of two long flexible rays, the first of the tallest, with the hinder to nearly membrane. The posterior fin arises a little in advance of the base of the pectoral, and passes over a space more than half the length of the fish. The anal fin is shaped like the first dorsal, and extends over a [illegible]



Novacula pavo

[illegible]

[illegible]

[illegible]

their diameter [illegible] [illegible] [illegible] the length of the head.

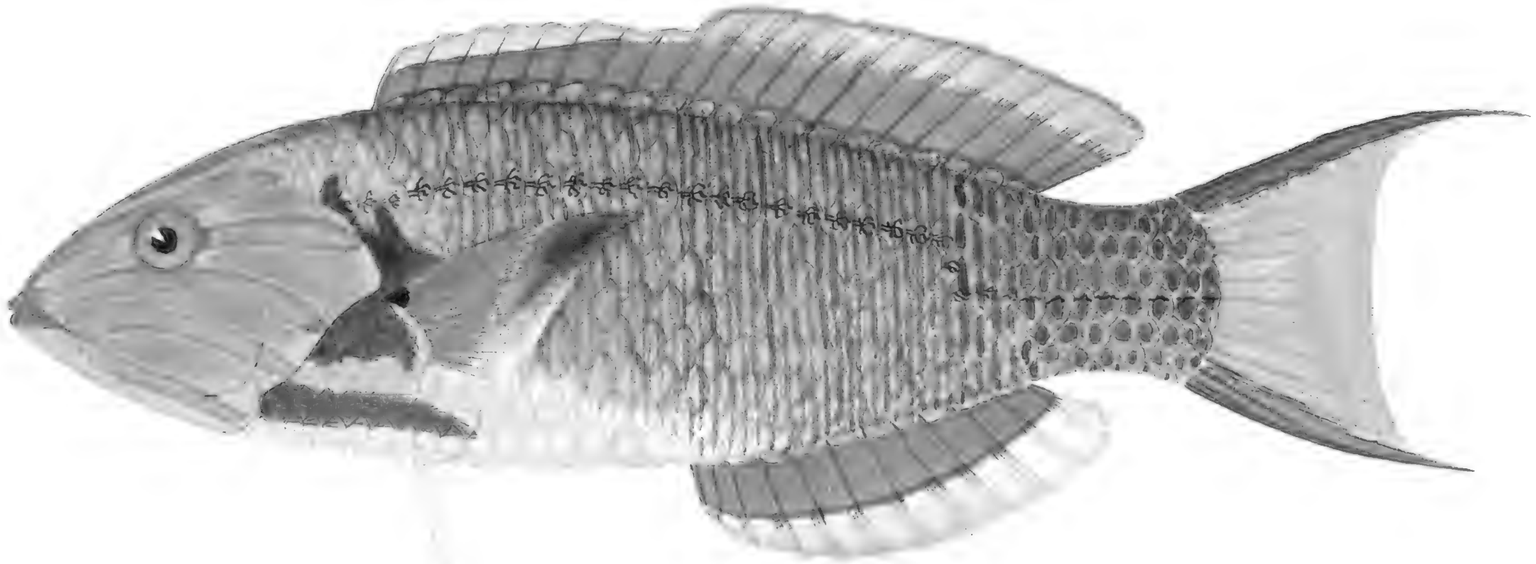
The dorsal fin [illegible] its [illegible] in some [illegible] above the [illegible] the [illegible] of the [illegible] [illegible], and the anal [illegible] on a base half the length of the former one. The ventrals have their [illegible] [illegible] [illegible] [illegible] [illegible] the terminal [illegible] of the [illegible] [illegible] the [illegible] [illegible] the [illegible] [illegible] the [illegible] of the [illegible] [illegible] [illegible].

Color of the [illegible] [illegible] [illegible], mark[illegible] [illegible] [illegible], [illegible] [illegible] [illegible], rose-red [illegible] [illegible] [illegible], carmine [illegible] [illegible]. nape, shoulder, breast and abdomen bright carmine-red. A long [illegible] [illegible] on the breast and a large [illegible] patch behind the [illegible], greenish yellow, [illegible] [illegible] blue. Head [illegible] [illegible] [illegible] with brilliant light-green edge [illegible] the blue. [illegible] [illegible] of the [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] of the dorsal, and anal, [illegible] [illegible] with blue, and their outer portion [illegible] [illegible]. The anterior [illegible] [illegible] light greenish. [illegible] of [illegible] [illegible] yellow, which [illegible] into deep blue black

[illegible]

Habitat. [illegible]

Remarks. [illegible] gave to [illegible] a small group of fossil horse [illegible] the [illegible] head [illegible] the [illegible] of the [illegible] which is [illegible] made by an artist employed by the Geological [illegible] Blanford's Report of Abyssinia [illegible] correct. During the [illegible] of the "Challenger" a fossil was obtained at [illegible] in the Cape Verde Islands, of which a drawing has been made by Mr. Chapman, which is stated to be identical with Blanford's [illegible]. They are no doubt derived from the figures in the zoology of the "Challenger" [illegible] authentic, but the artist has not [illegible] the vertical shadows on [illegible] feet. It would be well to remark that the above figure was copied from Gray's Illustrations of Indian Zoology. Japan Exp. [illegible] and [illegible] figure of a fish which [illegible] to this species. Cuvier and Valenciennes say that Sparus gallus [illegible] the same as the S. dentex. [illegible] other species are confounded [illegible]



Julis lunaris

margined with light red. The head is emerald green, decorated with copper red dots, margined irregular shaped bands, of which three radiate posteriorly from the orbit, one anterior, and a narrow elliptical one on the lower half of the head. Sides dark green.

The dorsal and anal fins are emerald green, the former the darker and darker by much than more or less the vermilion red, and ornamented by an irregular black spot, bordered light yellow-orange; back finely fresh, candied light yellow, colder on the posterior margin, and edged above and beneath with vermilion.

Length 3½ inches.

Habitat, Malabar.

We have seen but a solitary example of this fish, which was caught in a bay.

2

934

Julis whitmii
Cuv.

Gulo Luscus, Linnæus.

Gulo Luscus, Linn. Syst. Nat. p. 58. Pallas, Spic. Zool. fasc. viii. p. 1. Shaw, Gen. Zool. p. 317. Desmarest, Mammalogie, p. 207. Gulo Barbatus, Desmarest, Mammalogie, p. 207.

Total length, measured from the tip of the snout to the tip of the middle caudal ray, is equal to the greatest depth of the body. The head is proportionately large, and exhibits a short but equally arched contour. The eyes are large, measuring their diameter in terms five times in the length of the head. There exists a tangential ridge of skin between the dorsal fin and the abdominal line, not enumerated in any of the measurements along the base of the pectoral fin. The tubes of the lateral line are mostly difficult to mark 27 in all.

The spinal portion of the dorsal fin is long, the anterior rays gradually increasing in height to the eighth ray, when the fin tapers rapidly posteriorly. The ventrals are pointed and the pectorals are slightly concave in their hinder margins. The caudal fin has the upper and lower rays more or less prolonged, the lower beyond the upper so as to give the fin a crescent form.

Color in young specimens beneath, the breast and anterior portion of the body dark bright yellow, the hairs having white bases, giving it a grizzled appearance. Flanks marked with the rose-red vertical in the upper parts like Gulo Gulo [illegible]

Lightish yellow beneath. Sides green, tinged pale purplish. Dorsal bluish-green with a bright upper and lower purplish border. Head green. Ventral nearly cerulean. Pectorals marked by a blue black basal bar, and an oblong large spot of the same color which covers their outer tips.

Length 6 inches

Habit shallow seas.

Common species called by the natives [illegible]

No 2135

du perrey q

Gal. [illegible]

(b, b; D. 8–13; A. 8–11; P. 1; P. 11; V. 1, 1, 1, 1.)

The head contained in the [illegible] more than four fifths of the length of the body, are nearly equal in size, and their outline, the lower jaw slightly more arched than the upper, and the angle of the mouth equal one fourth of the total length. The eye is somewhat horizontal and oval, and rather more than three times in the distance between the snout and the first dorsal fin. The dorsal fins are low, the base of the first fin is equal to from 25 to 27 scales, and the second to from 28 to 30 scales in it, and to the tail.

The dorsal fin commences at a point a little posterior to the middle of the opercle flap, and is at least as high as the length of the second fin. The pectorals when bent do not reach the anal by more than [illegible] length, and the ventrals to the vent.

Color flesh-colored, darker above and paler beneath. The plant was marked by various irregular dark bars, which are more or less distinct, one covering each scale, and spreading laterally into spots, interrupted, and paler above, becoming much paler beneath. Sometimes the caudal branch is nearly covered with a large black spot, which

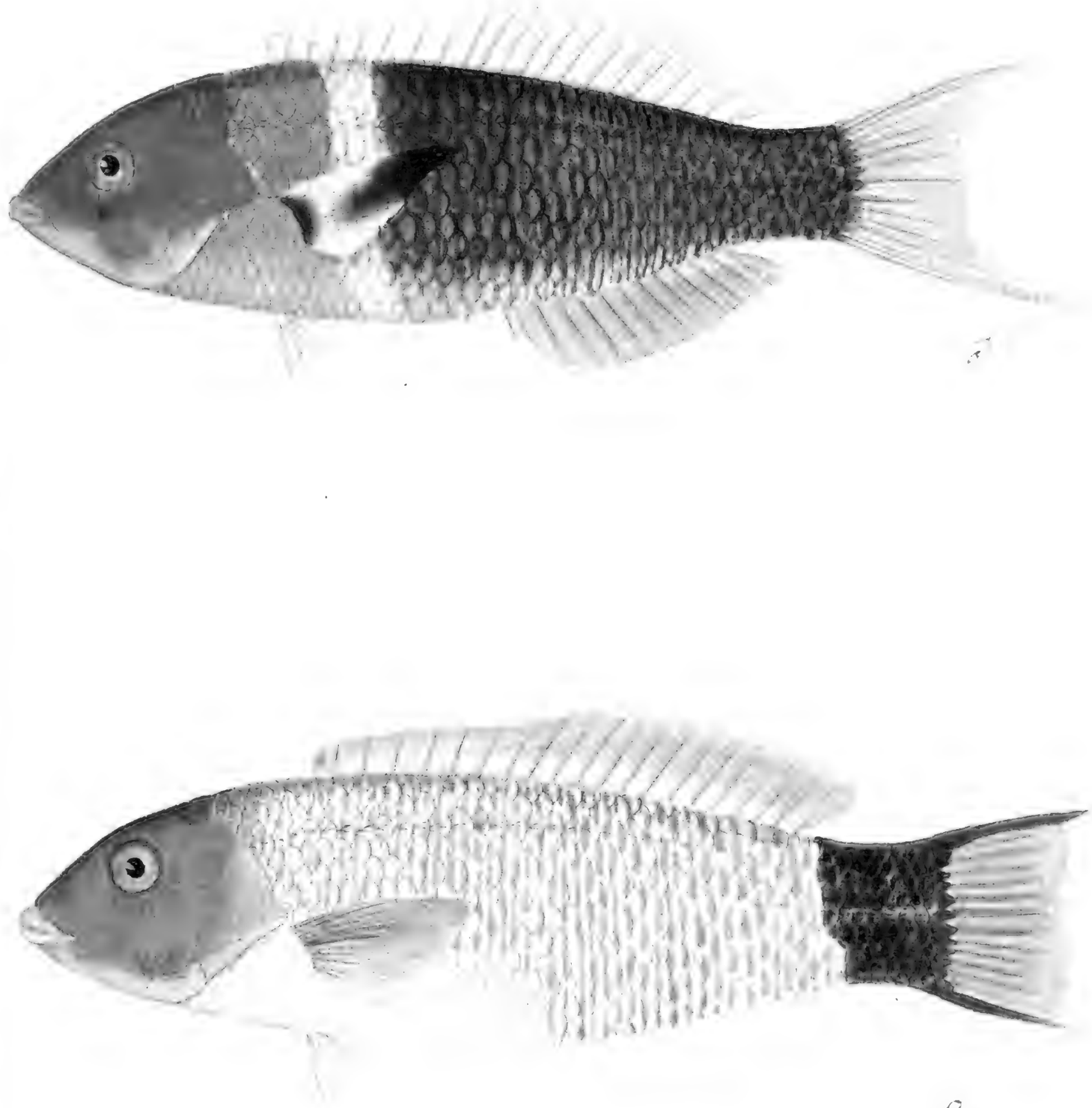
Upper surface spread over the crown of the head yellow bordered with dark green, broad fine under yellow, with a black stripe along the base. Throat light yellow, but the crown of another yellow. Tail nearly colourless and the pectoral bands and yellow rays.

Length 7 inches.

Hab. Sandwich Isls.

A common species called by the natives He-na-ta-tu-wa-hi-ne.

204



Cuvier delineavit

Tafel

205

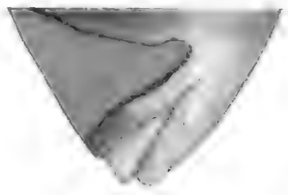
purpurea

Genus [illegible]

Genus [illegible] Linn. Gen. 1, 5, 5, 1, 3.

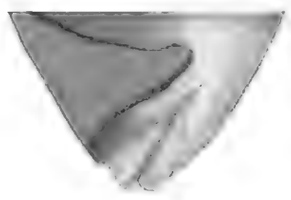
The general aspect of this beautiful species is elongated-fusiform. The dorsal contour slightly more depressed than the ventral region. The depth of the body, into it the origin of the anal fin, falls a little short of a fourth of the total length, which latter is comprised 4 times in the length of the head or a little more than thrice. The head exhibit a slight depression in the occipital region. The eye oval in shape, its greatest diameter entering about eight times in the length of the head, and a little more than three times into its distance from the end of the snout. The lateral line which is composed of interscent tubes, passes over 26–28 scales.

The dorsal fin [illegible] upon



t.

by three longitudinal series of
million red stripes, which are more
or less united by irregular vertical
lines. The upper stripe borders the
dorsal region, the middle one is,
or a little above the median line,
and the lower one arises from the
lower portion of the base of the
ventral fins. The head ornamentation
may be best understood by consulting
the figure. Sides green with a
red ring next to the corners. The
dorsal fin is rich green, bordered
to whole length by a red terminal
transversal light blue, the
lower third green, as is the basal
half with a longitudinal row of blue
red and black edged scales with few
black, ventral fins light blue,
pectorals with the basal third light
green, the upper margin light
blue and the upper posterior
portion with one or two other rows



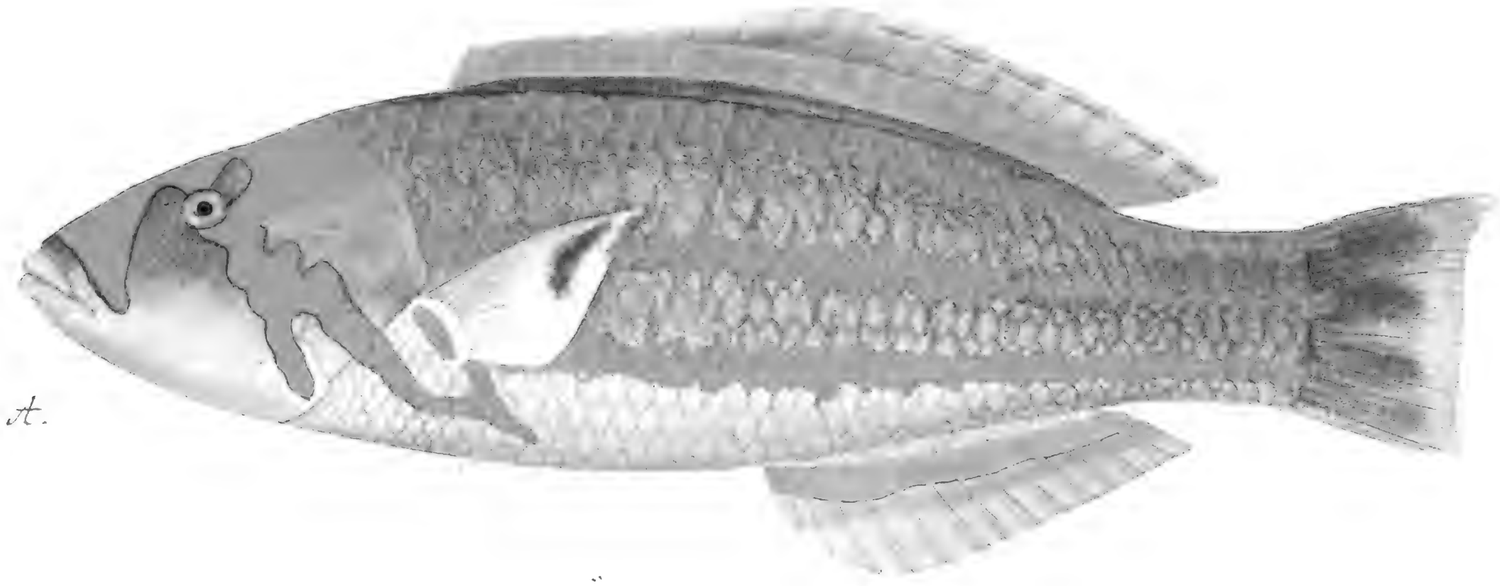
t.

Black spots on caudal is dark green changing into light green posteriorly the basal portion of the fin diagonally striped with purple.

Length 11 inches.

Hebrides Islands, Isles.

This species though not abundant, ranges all through Polynesia.



A.

A. [illegible]
(Taf. 149)

fusca

Gulis [illegible]

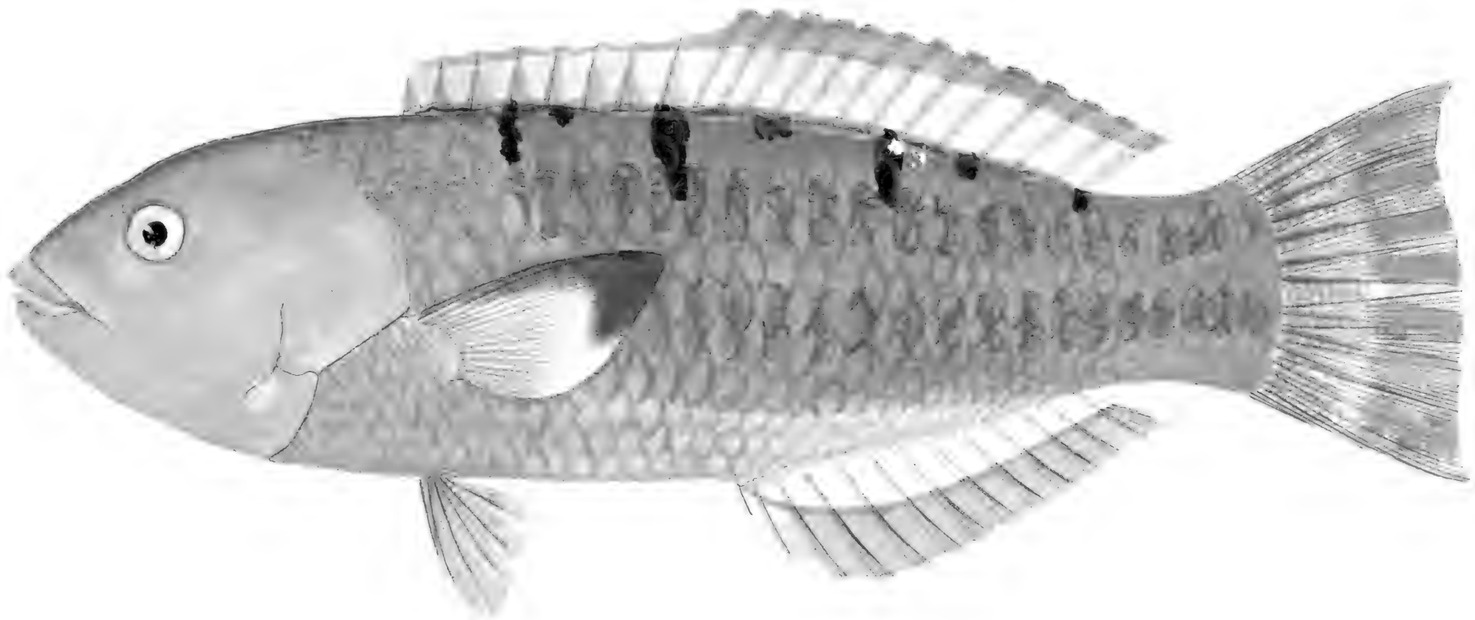
[illegible] The species has the upper profile much [illegible] the greatest depth of the body is equal to the length of the head, or nearly a third of the total length, caudal fin excluded. The upper the head are gently convex, the upper orbitals are slight depressions over the eyes. The eye are bi-convex, their diameter contains three times in the length of the head, three times between their anterior edge and the end of the snout. In the medium size ~~the~~ the body may be counted about 27 scales, 13 before the dorsal fin, in the greatest depth of body, 9 upon the lateral front, and the lateral line shows exhibit numerous tubes pierces in 19 scales, 19 of which are above the pectoral reflections be made to the head. Teeth which characterize the genus, them may be observed a few flat spinular ones near the end of entire jaw.

The dorsal fin rises at the posterior corner of the opercular flap or other anterior rays from the first anterior ray. Its spinous portion is as long as the pectorals, and it soft part extends as a base as long as the head. The anal fin commences just opposite the dorsal articular glandular [illegible] with that fin. Its anterior [illegible] rounded off and tapers upon posterior. The pectorals when [illegible]

[illegible] their own
height. The [illegible] is large, truncate,
with the [illegible] slightly prolonged.
[illegible] somewhat variable, generally
[illegible] the dorsal region,
and the [illegible] [illegible], passing
in [illegible] yellow beneath, or
[illegible] the anterior fin.
[illegible] It is
[illegible] by the [illegible]
[illegible] often [illegible] vertical
[illegible] centers are
more or less tinged with sap-green.
The upper series of spots are in a level
with the eye, and the lower in a
line with the [illegible] pectoral fin.
[illegible]
[illegible] spots marks the dorsal
is [illegible] sap-green. Oral tentacles
[illegible] rich blue. Dual blotch
on the [illegible] half, the upper tawny-pink,
[illegible] yellow, the lower yellow [illegible]
[illegible] tinged [illegible] on its
[illegible] half the [illegible] with [illegible]
[illegible] of blue. Dorsal membrane red.
Length 11 inches.

Hab. [illegible] Society Isles,
Bangkok Isle.

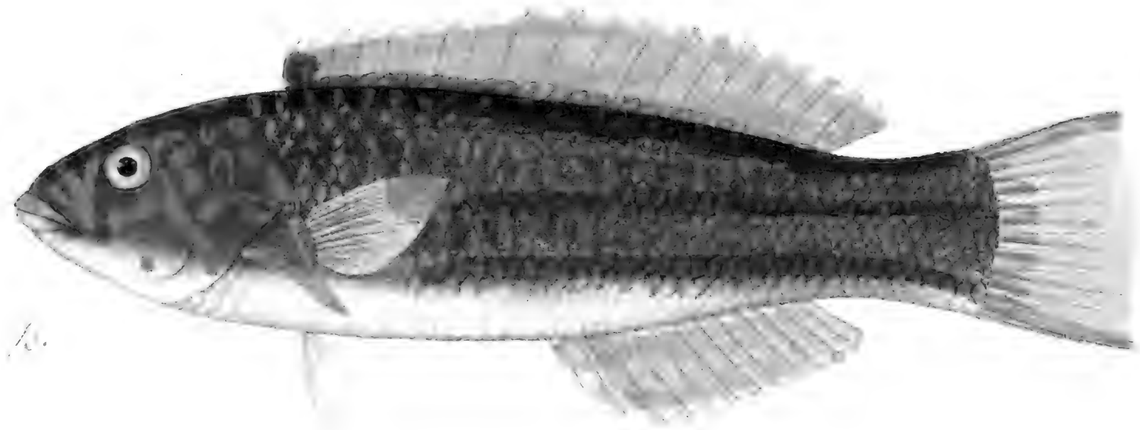
[illegible] species called A-wa-la
at the former [illegible].



Julis fusca

Gulis ~~[illegible]~~ umbrosiforme

208



B. [illegible] umbratilis
Lin. 1 9.

günthéri, Bleek.

Gulis formosus, Schlegel.

Dubius formosus, Schlegel, Mus. P.
Bas. Pays-Bas, Coll. Schlegel, pool.
Ins. Java, Fishes,
p. 60, pl. 49, figs.
[illegible]

The general depth of the body is contained twice in the length of the fish is to mine. The head is less than three times in the total length, or [illegible] contained, this diameter being one fifth the length of the head and the hinder limit of the orbit is opposite minute between the end of the snout and the middle second of the operculum. The dorsal fin rises it origin immediately above the anterior base of the pectoral; the spinous portion is comparatively low and much shorter than the soft part, the anal is not as low as the latter part of the dorsal. No pectoral ray is of the caudal is emarginate.

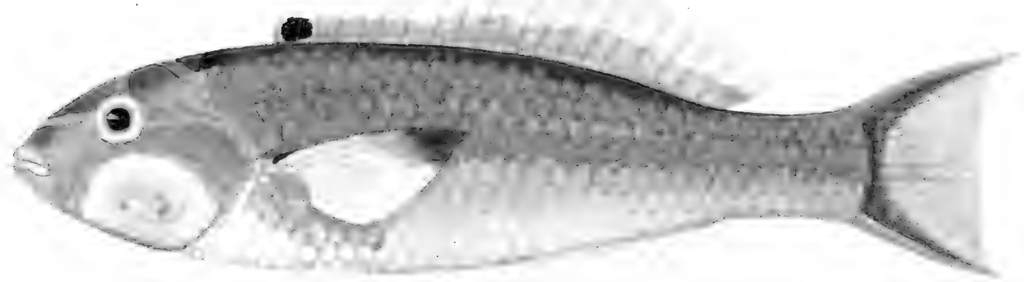
Olive with green gloss beneath. Head black-white. The upper ray of the body is barred as the two centre red bands, and two short oblique ones just in advance of the pectoral, but small black spot marks the pectoral axilla. The top of the head is

purple red, passing into light red beneath. Side ornamented with two wide, emerald green ribbons, the upper one interrupted by the eye and the lower one bounded a pale greenish space between similar ribbons passing over the head from eye to eye. Sides light green. A black spot marks the anterior end of the dorsal fin, which latter is to be blue black above and to let red beneath. Anal plain light blue. Caudal light orange, which fades into green anteriorly, its upper and lower lines are red. Pectorals and ventrals nearly colorless, the former more or less tipped with blue-black.

Length, 6 inches.

Habitat.—Florida, Key, Pin, mill Ds, Pensacola Fla. Coll. C. S. N.

Remarks.—A common species characterized by the orange ribbon on the head, the black spot on the snout and the emarginate caudal. [illegible] of this genus in [illegible] Gulf Stream is from a [illegible] in the [illegible] that is [illegible] in many respects, yet I do not hesitate in [illegible] to the Jamaican [illegible].



Gulis dorsalis, n. et gen.

Labrus pulcherrimus, Ehrenb., Mus. B.

Pseudolabrus Thunbergii, Bennett, Fishes of Ceylon, 12.

Gulis dorsalis, Bloch et Schneider, syst. ichthyologiae, 184, pl. 50, fig. 3.

" " Cuvier et Valenciennes, Hist. nat. des Poissons, xiii, p. 111.

" " Richardson, Rep. Ichthyol. China & Japan, p. 72.

D. 9–12; A. 3–10; L. 27; l. l. 5; l. t. 1/2.

The greatest depth of the body equals the length of the head, but is rather less than a little short of one-fourth of the total length of the fish. The eye is rather in front, and their diameter is less than one-third of the length of the snout. The dorsal fin arises a little in advance of the pectoral, and possesses a base equal to about half the length of the fish; caudal expanded & it tapers rather from the first ray, the most late of rays opposite to the second spine, but at any rate tapers off posteriorly. The caudal is truncate with the upper and lower ray is considerably prolonged into sub-lunate points.

Color of the upper surface of the head and body, which [illegible] in a little

is a bluish-white beneath. Sides of the body marked with six lateral, slightly dipped descending black lines, the first of these touch the other, usually broken in shorter, and the median one ascends to the dorsal fin where they join into a regular stripe, which reaches that fin. There is three spots on the nape, one the second exactly black. Two, more or less indistinct, after dipped along the upper end of the side, in about insert median line and with some radiating from the eyes and on the gill covers, light red. Sides golden-yellow. All the fins slightly tinged with yellow, the caudal margin, and above and beneath with lively yellow and an triangular light red back. In adult, state a large spot, shaded off with purple, mark the anterior half of the anal fin.

Length, 7 inches.

Habitat:- Society Isls, Samoa Isls, Harvey Isls, Isle of France, Ceylon, China.

Remarks:- Common species at the former location where it is called "Pau" the black descending lines are its most prominent characters.

Julis ~~trilineata~~ Garrett. [Malaschir]

[illegible]

The head constitutes one fourth of the total length, caudal excluded, the circular, their diameter entering four times in the length of the head, and once in advance of their own orbit. The general shape of the body is rather slender, its greatest depth being equal to the length of the head. The dorsal fin commences above the middle angle of the opercle and tapers slightly either way from the fourth spine. The caudal is more or less crescent shaped.

Color greenish yellow, brownish purple below, the posterior three fourths of the body is marked with close, vertical narrow, more or less interrupted purple and black bands, which become moniliform on the trunk of the tail. The head is dark blue above, passing into green on the snout and light blue beneath. Two rusty-brown lines traverse the cheek of the head, both starting from the snout, the upper passing through the eye and terminating at the opercular angle, the lower ending at the angle of the mouth. The dorsal fin is of a dark

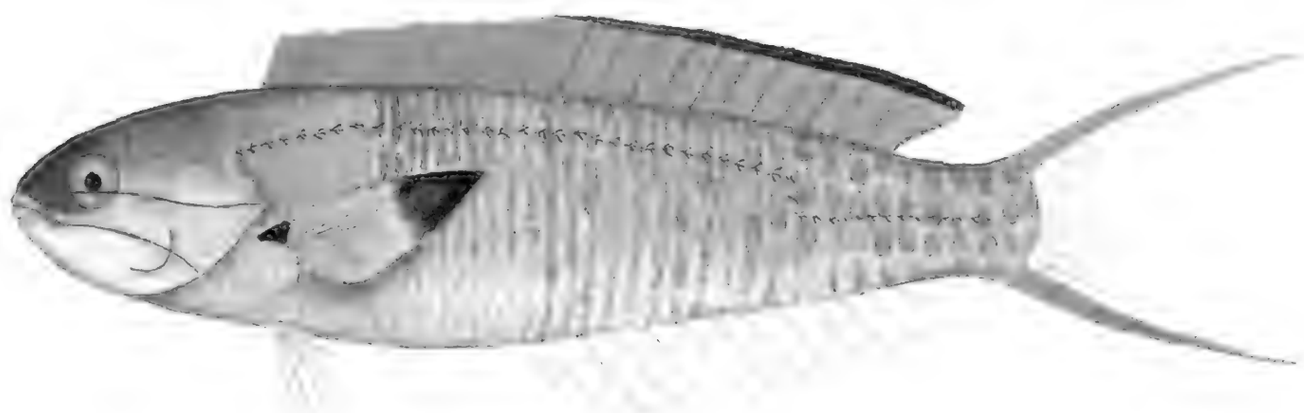
its soft portion is margined with black. Anal fin carnation. Lateral colorless, except its upper and lower margin, which is pinky-red, tentacles colorless. Pectorals yellow, their posterior third black, glossed with blue, and a small deep blue-black spot marks their upper basal portion.

Length, 6 inches.

Habitat. Society Islands.

Remarks. A rare species, of which I have seen three specimens.

Julis dorsalis



Julis mediterranea

Blackish, becoming paler towards its base; the extreme margin is white, bounded outwards by a broad band of light red, which is edged with light red, but has no particular outline.

Length 1 inches. — see description only 1 1/2" long

Mr. Scott, Sen.

a very dubious fish, size of scales quite unreliable figure not fit for reproduction or description

Salmo fracnatus, sp.

D. 8/13; A. 3/11; V. 9/9; L. lat. 115; L. tr. [illegible]

The snout of this species is neither obtuse, and comprises two-sixths of the total length of the fish. The height of the body is [illegible] the length of the fish is about one-to five. The eye is circular, its diameter is contained four times in the length of the head, and once in a space [illegible] the tooth are the same as in Gal. leucoceph=alus. The crescent teeth of the lateral line pass over 26–29 scales. There may be [illegible] 12 rows of scales between the dorsal and abdominal series.

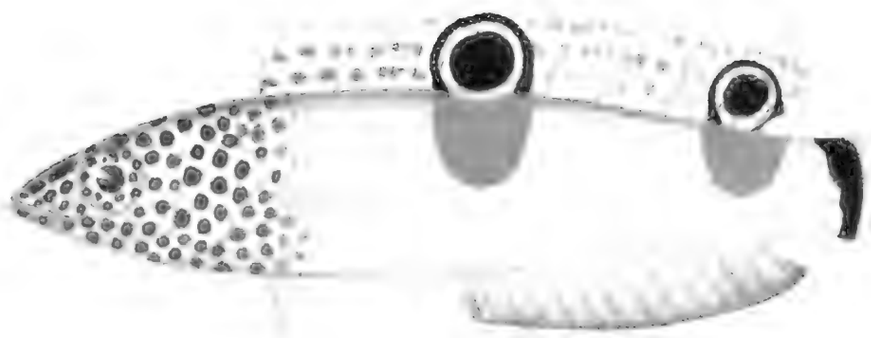
The dorsal fin commences above the opercle flap [illegible] over a base [illegible] half the entire length of the fish, excluding the caudal fin. Its [illegible] is not quite so long as the head. The anal is full as the latter organ. The small ventrals are inserted beneath the hinder base of [illegible]. The caudal is truncate behind and the two [illegible] are prolonged in acicular points about one-third the length of the fin. The upper [illegible] is [illegible] and the lower half is [illegible] with a tinge of yellow along the abdomen. A slate colour [illegible] extends from the end of the snout and [illegible] the base of the caudal. A [illegible] margin is sharply defined [illegible] the upper shades off. An orange [illegible] black bounds the lower [illegible]

posterior of the dark band which traverses the head at second time of a pink color edged with blue passes from the angle of the mouth obliquely downward across the gill covers. Sides yellow. Dorsal dusky with small pale ocellaceous spots with a colorless margin. Pectoral fins yellow and tipped with blue-black. Caudal and pectorals coloring the ~~lower~~ former with the upper and lower margins shaded off into orange-yellow.

Length 2 to 4 inches.

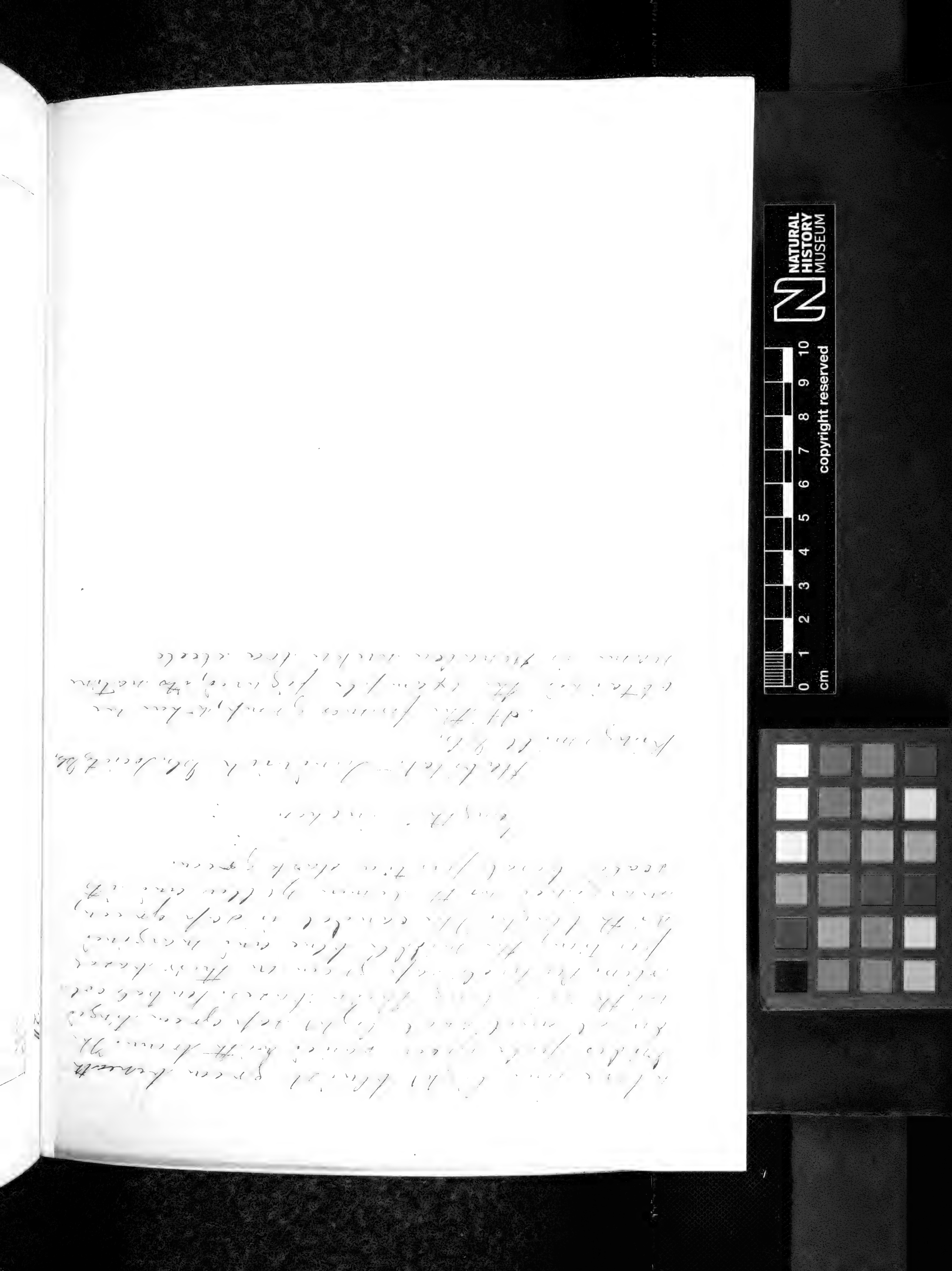
Hab. [illegible]

202



203

Julis amblycephala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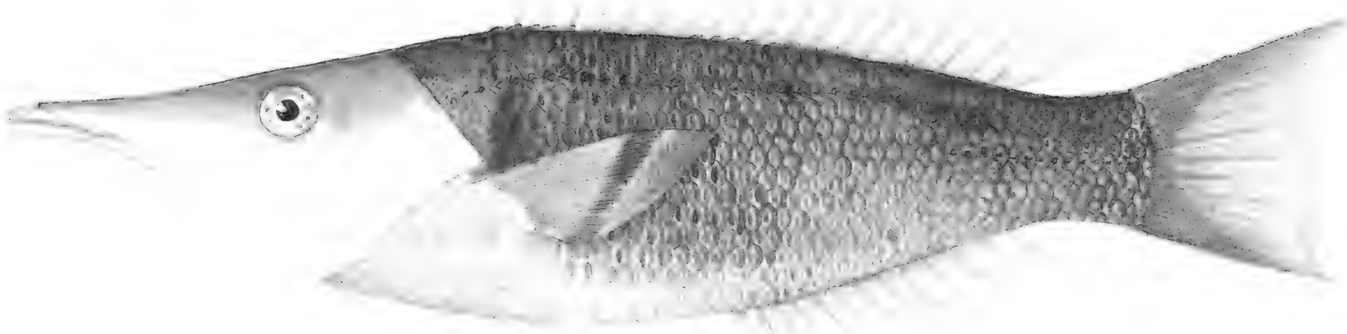


Somphonus tricolor

Callyodon genistriatus

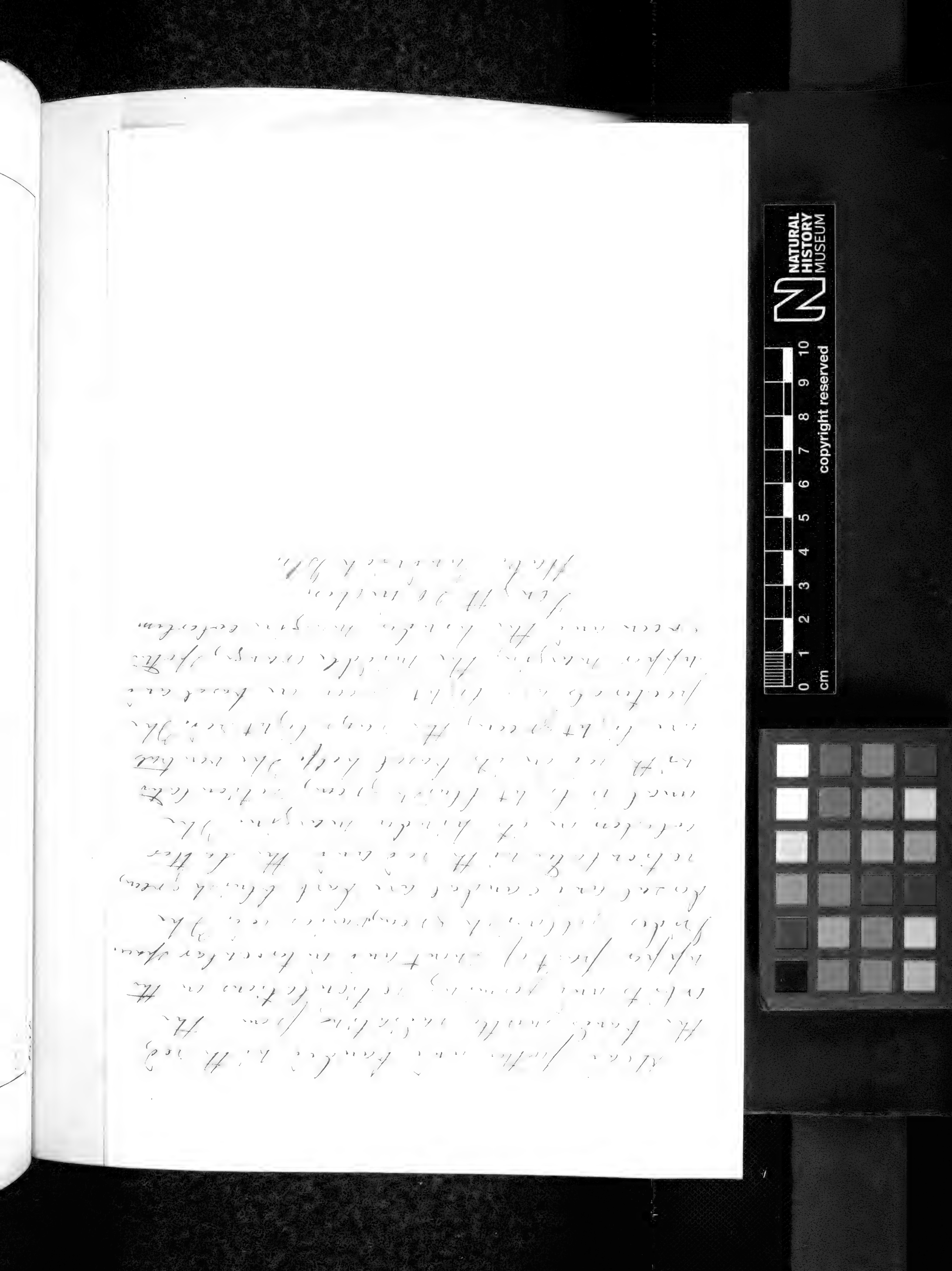
Sp. Linnæus in 1758

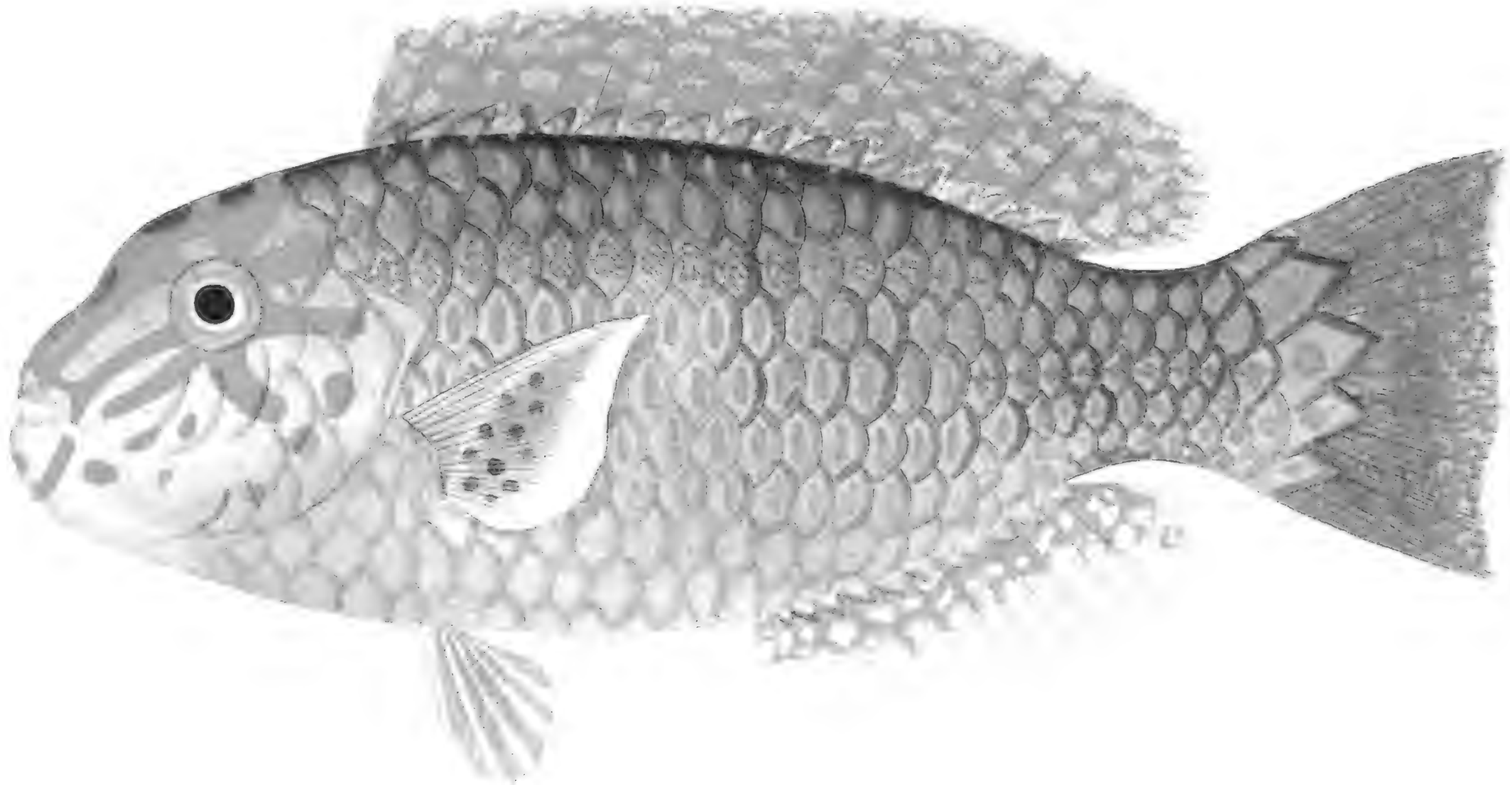
The snout is pointed, the jaws as robust, and the teeth which compose a portion of the first, is either in front, turned upwards and forwards of the eyes, and the chin large and rounded. The eyes are circular, their diameter entering five times in the length of the head.

The dorsal fin commences in advance of the operculum angle and the spinous portion which is composed of flexible rays is a little longer than the soft portion, which latter is slightly arched. The anal fin takes its origin opposite the first articulate dorsal ray and is slightly arched. The ventrals are rounded and the pectorals are broad, the upper posterior angle slightly prolonged. The caudal is large and truncate or slightly emarginate posteriorly.

D. 9-11/10-12; A. 2-10/8-9; P. 14/13; V. 1/5.

Teeth olivaceous, the posterior into bluish green beneath. Each scale with an oblong vertical red spot, which becomes more posteriorly and gradually becomes pale beneath.





Pallidon geristriatus
Tafel

Pellyodon sandvicensis

Cat. [illegible]

[illegible]

[illegible]

[illegible] the [illegible] is [illegible], [illegible] and beneath. [illegible] [illegible] the [illegible] of the dorsal [illegible] [illegible]

[illegible] of the fish, is rather [illegible] in front, with a slight depression on the snout, and the [illegible] eye enters six times in the length of the head. The scales are very large, and the hinder tubes of the lateral line are [illegible].

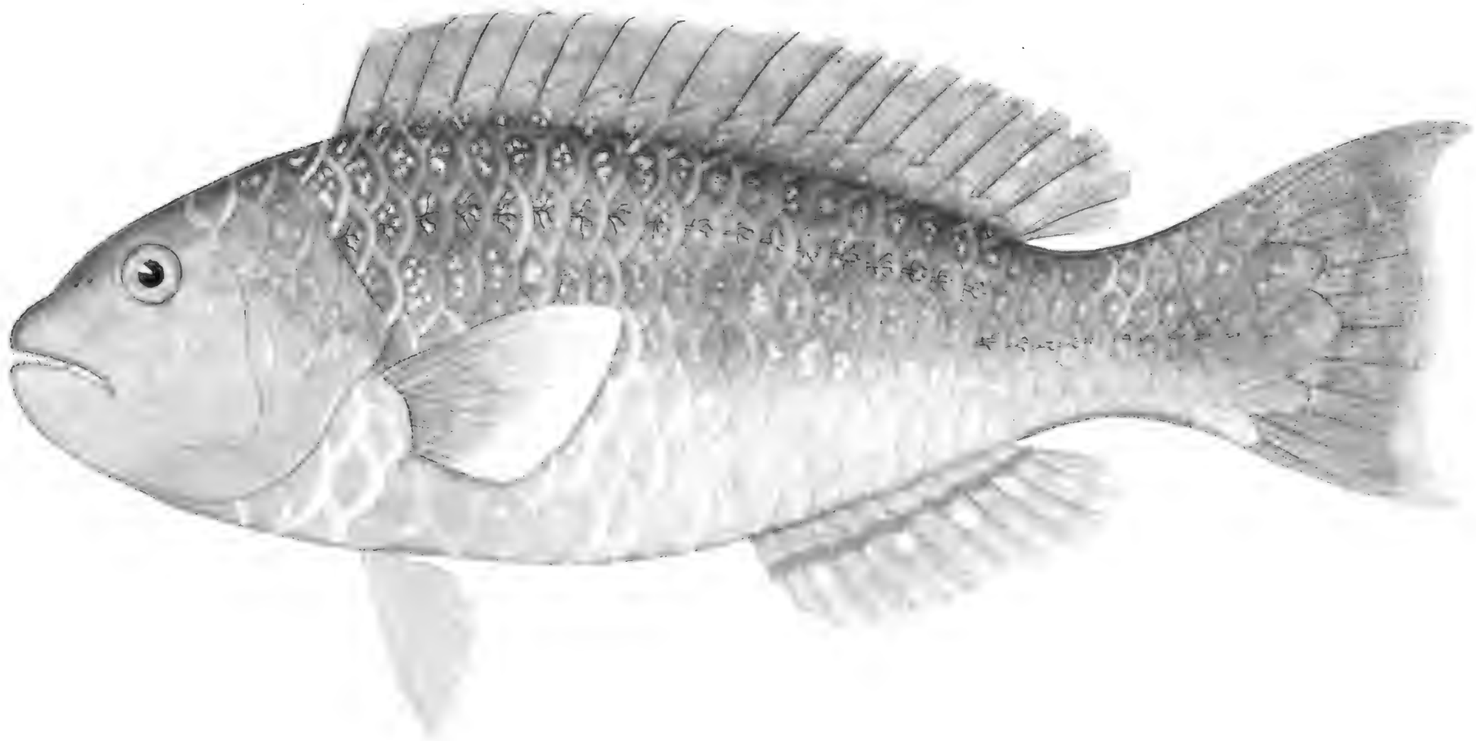
The dorsal fin rises near the origin of the lateral line and passes as far as to have nearly half the length of the fish. The caudal is slightly emarginate in its hinder margin, and the upper and lower angles are slightly prolonged. The anal fin is a little shorter than the soft portion of the dorsal.

Color, brownish olive on the upper two-thirds, the lower parts reddish, and the scales with small irregular bluish white or greenish white spots. Besides [illegible] brownish. The dorsal fin is reddish olive with dusky spots.

carotid stemmed & closely with deeper shades and a few faint pale spots. Anal and ventrals light red, the former with a white and vermillion margin and pale spots. Pectorals clear, becoming colorless outwardly.

Length 11 inches.

Hab. Sandwich Isls.



Callyodon sardoicensis
(Lafr.)

Scarus gametti ~~fuciceps, Jenyns~~

Plate 409

B. 5; D. 9–11; A. 11; L. l. 55–60; L. t. 12/5.

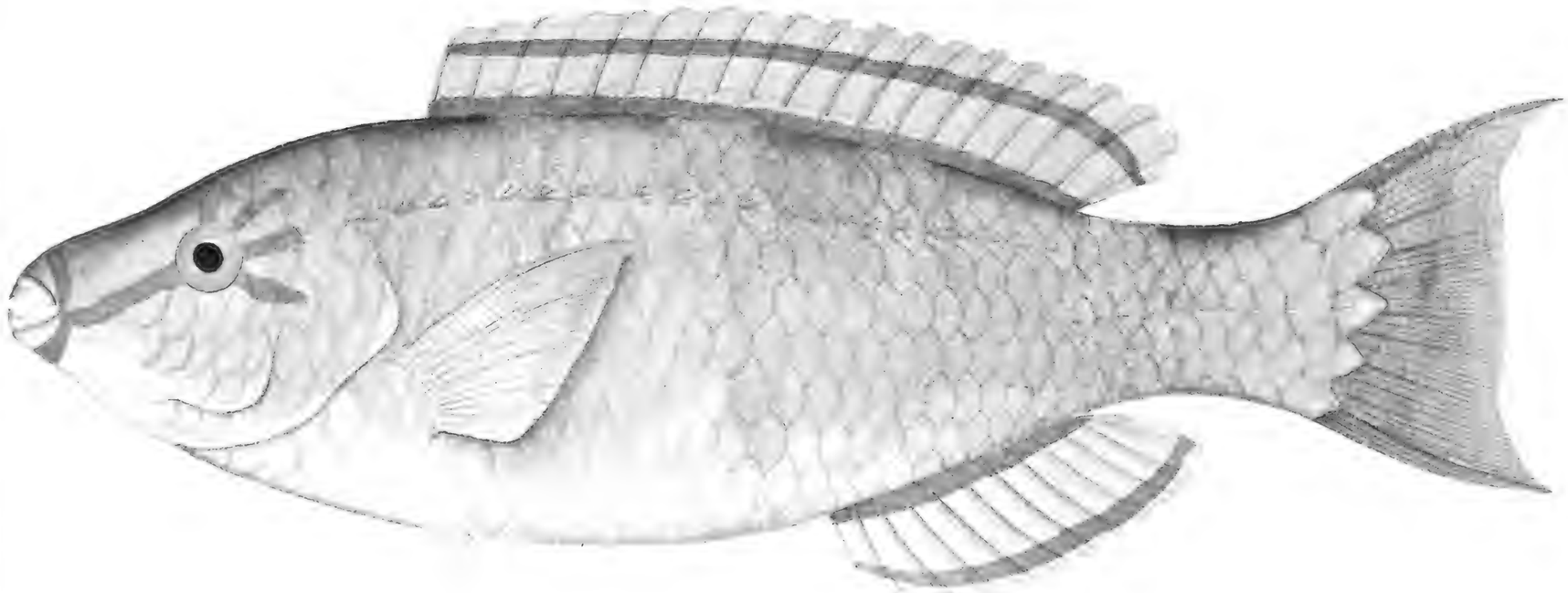
Form rather elongate, and nearly similar in outline both above and beneath. The greatest depth equals the length of the head, which latter is a trifle more than a fourth of the total length. A slight concave depression may be observed above and forward of the eyes. The eye is large, circular its diameter being one-thirteenth of the length of the head; enumerate thirty scales marked with the lateral line tubes, which latter are less divided than usual.

The pectorals are well developed, but all the other fins are of moderate depth. The caudal has its upper and lower posterior angles produced into elongated lanceolate lobes.

Color, grayish umber, with five, wide, diffuse, vertical, blue bands which are narrower than their interspaces. Four or five abbreviated blue stripes radiate from the upper and hinder limbs of the orbital band encircling the muzzle and one extending from the angle of the mouth to the eye, lined beneath with color. Ventrals tinged with pink, the color fading yellow becoming more intense toward their tips. Dorsal, anal and caudal, umber, the two former with a longitudinal basal and intramarginal blue band. The latter fin is margined with the same color above and beneath.

Length, 12 inches. Habitat. Kingsmill Isls.

Remarks.—Native name "Tou-ru" The color of this species is unique, and will at once distinguish it.



Scaridae darwini
Cap.

globiceps

Genus ~~tentaculatus, nob.~~

[illegible]

The head compriseth rather less than a fourth of the total length. The upper line of profile above the eyes is very prominent, and the snout is slightly concave above. The eyes are sub-circular, and comprise one-ninth of the length of the head. There concentric rows of scales on each cheek. The upper jaw is covered by the lips, and, as has been the lower is provided with a pair of the angle of the mouth. The caudal keel is depressed posterior emargination and acute angles.

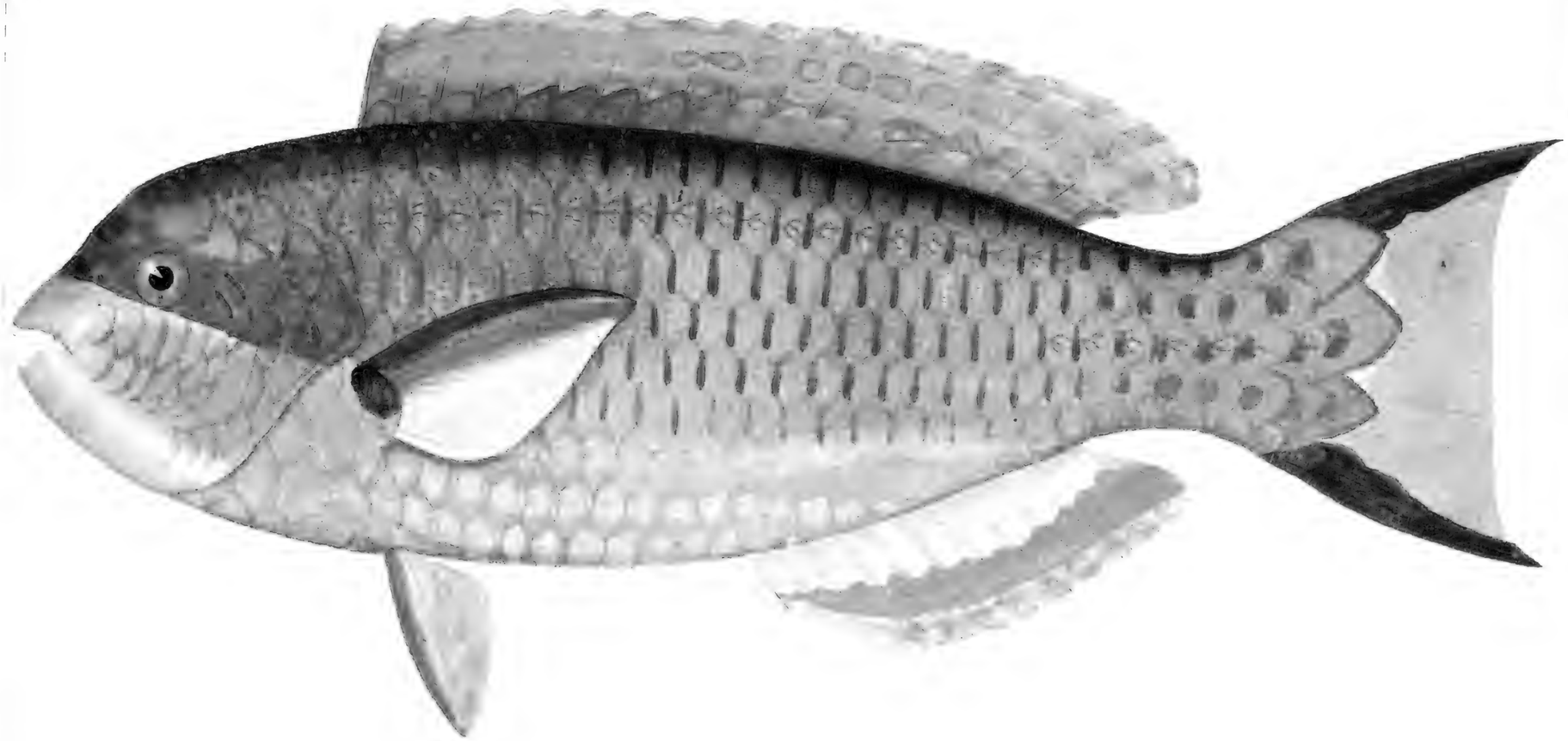
Color, a very opaque white passing into sap green beneath. Two indistinct with a vertical dusky violet and cerulean spot, which unite on the peduncle of the tail and assume rounded markings. The scales along the lower portion of the flanks are barred by broken longitudinal cerulean bands. A purple-brown patch marks the base of the pectorals. The upper anterior half of the body, belly, with exception of transverse violet bands including a green one on the intercaudal area, and broad cerulean wide

band extends from the eye to the operculum corner. The middle of the head is emerald green which passes into sap-green beneath. Lower part of head bluish-green. Sides golden with olive shades. The dorsal fin is amber-yellow margined above and beneath with bluish-green, and traversed by a horizontal pale green stripe which breaks into spots in the soft portion of the fin. The anal fin is carnation along its basal portion, amber-yellow beneath and margined with bluish-green. Ventrals amber-yellow margined anteriorly with bluish-green. Pectorals pale greenish, widely margined above with dark green and a violet stripe. Caudal sap-green, edged above and beneath with dark green and an intramarginal violet stripe.

Length, 12 inches.

Habitat.—Society Isls.

Remarks.—A common and very beautiful species called at the Society Islands E-u-hu pa-hu-ro-u.



Scaroides glaticeps

ovicaps.

Scarus ~~cuvifasciatus, Garett~~

B. 5; D. 9-10; A. 2-7; L. l. 25-28; L. t. 13; C. 2, 1, 6, 5, 1, 1.

The head, which constitutes one third of the total length, caudal excluded, is slightly concave upward and forward of the eyes. The height of the body is slightly more than the third of the entire length, excluding the caudal fin. The eyes are sub-circular, situated about midway between the end of the snout and the hinder termination of the opercle, and their diameter comprises nearly a seventh of the length of the head. There are three concentric rows of scales on each cheek.

The dorsal fin commences a little posterior to the opercular flap, and extends over a base, which is equal to half the length of the fish, caudal excluded. The ventrals are pointed, their length half as long as the head, and when laid back do not reach the anal by once their own height. The caudal is convex along its posterior margin, and the upper and lower angles are produced into a point.

Color of the lower portion of the head and breast black-gray, and the posterior

half of the body is gray. The upper part of the head and anterior dorsal region is of a slate color. The middle portion of the head and the anterior middle part of the body yellow. A blackish-slate broad diffuse band passes from the end of the snout, through the eye as far as the middle of the pectorals where it suddenly curves up to the dorsal fin. A large oblong vertical diffuse yellow spot on the upper posterior portion of the body. Sides grayish-silver. The dorsal fin is pale livid and faintly clouded with dusky, and blush-ated with a livid tinge between the rays. Caudal light yellow. The ventrals and pectorals nearly colorless, the former tinged with livid and the latter with light shed blue.

Length, 12 to 14 inches.

Habitat.—Society Isls, Pomotu Isls.

Remarks.—At the former location this species is called "Hure" by the natives. Its peculiar markings will readily distinguish it from any other species.

229

350

Pseudoscarus oviceps
(Rapel

Sciurus ~~mammalis~~, Garrett.

B. 5; D. 7-11; A. 3-5; L. 1-5; P. 14; C. 2, 1, 6, 5, 1, 1.

The general aspect of this species is robust. The ventral outline is more arched than the dorsal, which latter is slightly depressed along the head. The greatest depth of the body exceeds the length of the head. The snout is rounded and projects in advance of the jaws. The upper jaw is armed with a pair of incisors which project laterally from the angle of the mouth. The eyes are oval, their greatest diameter entering about seven times in the length of the head and three times in advance of their orbits. There are twenty-two scales along the median line of the body and twenty six may be counted in the course of the lateral line.

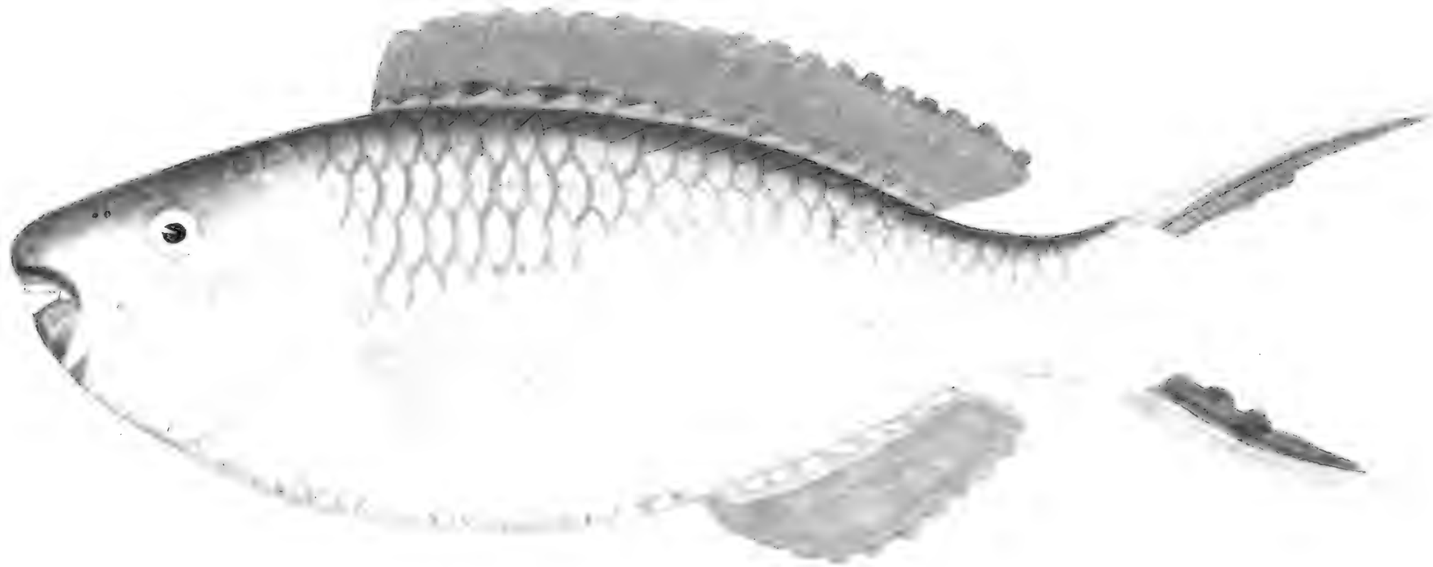
The dorsal fin commences immediately above the hinder termination of the opercle flaps, and together with the anal are of moderate depth. The large caudal is crescent shaped.

Dorsal region and upper part of the head emerald-green. Flanks pale-white, and bluish-white beneath. Caudal trunk light green. Color marginal light red. The upper lip is edged with copper color shaded off with bluish-green. Lower lip edged with the latter hue and a broader band of copper color, posterior of which may be seen two parallel abbreviated bluish-green stripes. Sides whitish-yellow. Dorsal and anal light red, margined throughout with bluish-green. Caudal very pale greenish, margined above and beneath with emerald-green and an intramarginal violet stripe. Ventrals and pectorals nearly colorless except a slight tinge of light green.

Length, 15 inches.

Habitat.—Society Isls.

Remarks:—A single specimen of this species was obtained at the Society Islands, where it is called "Ulu-ma-rea". Its most obvious character is the produced snout, crescent shaped tail and peculiar color.



Scaroides ostriatus
Cuv. 154

Scarus ~~[illegible]~~ forsteri

B. [illegible] D. [illegible] V. [illegible] A. [illegible] C. [illegible] P. [illegible] L. [illegible] Type.

The head, which constitutes about one-fourth of the entire length of the fish, presents a concave depression upward and forward of the eyes. The greatest depth of the body equals one-third of the total length, caudal excluded. The eyes are circular in form, their diameter entering nearly seven times in the length of the head, and the hinder limit of their orbit is midway between the tip of the snout and the hinder termination of the opercular flap. The gill-pores present one of the usual arrangements which project upon the anterior of the body. The concentric rows of scales in each cheek. The dorsal fin extends from the nape to the origin of the lateral line, and the first, [illegible] caudal large, convex behind, and the two angles considerably produced into tangular points.

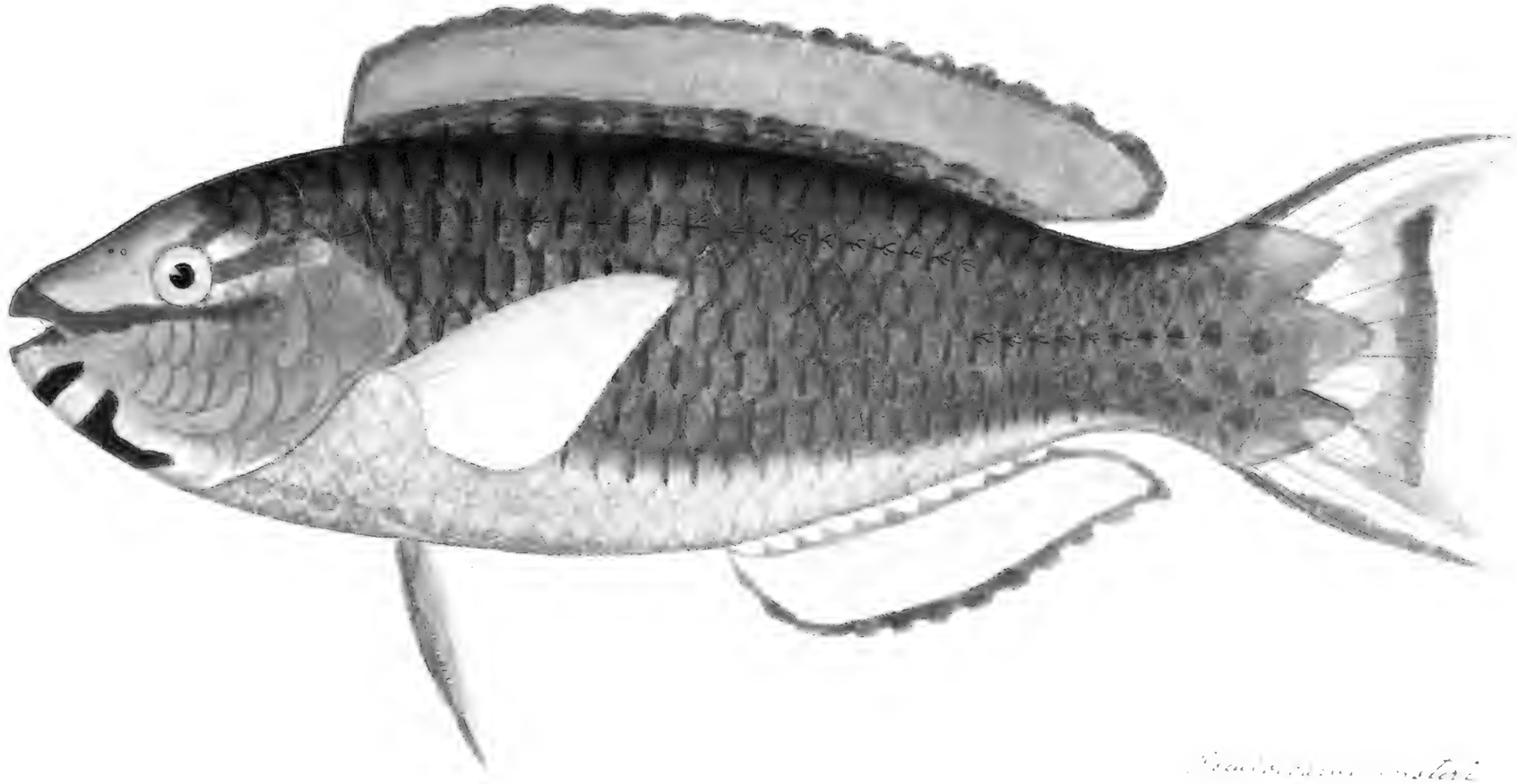
Dark green passing into violaceous-pink beneath. Each side of the primary color is ornamented with a central brown deep violaceous-pink spot which [illegible] into

roundish incrustations on the head of the caudal fin, the outer on the breast and belly have each a dark green centre which assume the appearance of broken longitudinal stripes. A long shaded black green stripe borders the lower line of the breast and abdomen. The upper anterior portion of the head is yellowish, the side violet-red and pearly beneath. The margins of the dorsal stripe, which is a continuation of the margin of the upper lip and two posterior orbital radiating, blue and shaded transverse ~~spot~~ stripe and a large irregular spot on the lower part of the head, green, bordered light yellow and light red, margined all round with the black green. Dual carunculus and marginal like the dorsal, caudal green, the upper and lower margins bright green, and an extramarginal carunculus stripe of a spot of the darker color on the base posteriorly, the outer marked with a transverse irregular red band, sectioned by a black green, intersected the same, marginal carunculus with a dark blue, which is shaded off with carmine.

Length, 12 inches.

Habitat; Keiti Isls.

Remarks. A beautiful species, which several have come to our notice.



Scarus [illegible] molae
(Tab. 155)

microchirus

Pseudo Icarus ~~prematurus, nobis.~~

B. 5; D. 9 or 10; A. 12; P. 11; V. 6; L. lat. 60-64.

The general aspect of this species is more robust than usual. The greatest depth of the trunk is equal to one third of the total length. The head, which is the pointed and pyramidal of the species, contains, only one third of the fish, caudal excluded. The upper line of the mouth is nearly horizontal, slightly oblique and forms an angle of about 10°. The eyes are subcircular, the transverse diameter equalling the length of the snout, the diameter limits of the upper one is provided with a spinous lobe. There is a small barbel on each cheek.

The dorsal extends on a little in advance of the pectoral fins and is more than twice as long as the caudal, which latter is truncate or at most very low, and the angles prolonged into blunt points.

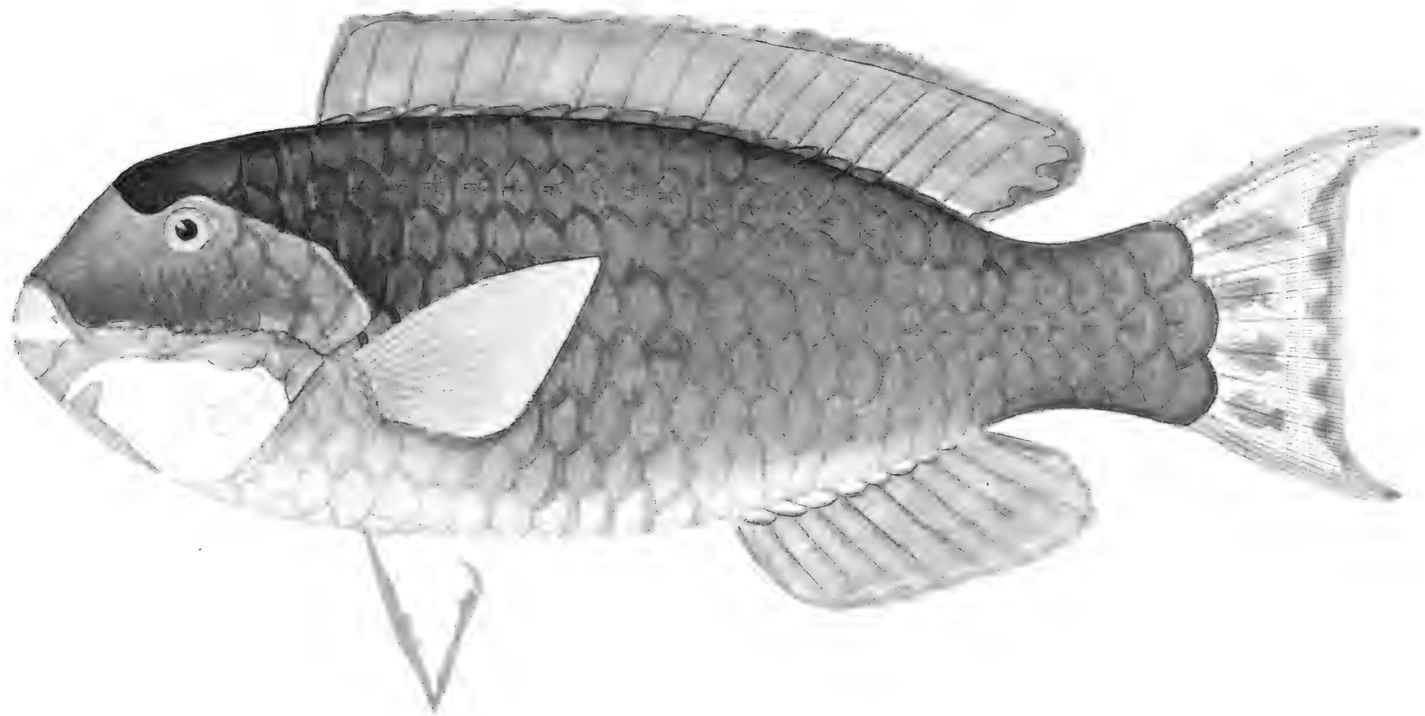
Red and purplish on each side, darker along the back and belly, each scale marked with a reddish brown reticulation, which become more dilated on

the bounds of the bill, the upper half of the snout, cheeks and the upper portion of the opercular pieces light brown, shaded of hazel above colors. Margin of the upper lip, a wide band under the chin, black, and back from the angle of the mouth to the opercular margin, and underneath the head brilliant emerald green. Iris green. Dorsal and anal white tipped yellow, the former margined with greenish-blue and edged with black; the latter fin is margined with light blue. Ventral pale lilac margined inwardly and outwardly with light blue. The caudal is brownish lilac, margined all round with bluish-green; the pectoral margin is more or less lilac and dusky of the same color may be observed in the genuine color of the fins. Lateral bluish-green.

Length, 16½ inches.

Habitat.—Society Isles.

Remarks. A single mutilated specimen was obtained at the above locations.



nuchipunctatus

Pseudo Scarus ~~ultro viridis, Garrett.~~

B. 5; D. 9–11; A. 9; [illegible]

The greatest height of the body is a little less than a third of the total length, and the head contains not one fourth of the fish. Its eyes are sub-circular in shape, their diameter contains about seven times in the length of the head, and in order exactly midway between the end of the snout and the hinder termination of the opercular flaps. In shape of head these concentric rows of conical, pine-like teeth project laterally in the hinder portion of the upper jaw.

The pectoral are pointed into long points. The large caudal is convex along its posterior margin, the two hinder angles are consequently drawn out into acute points. All dorsal and anal are well developed.

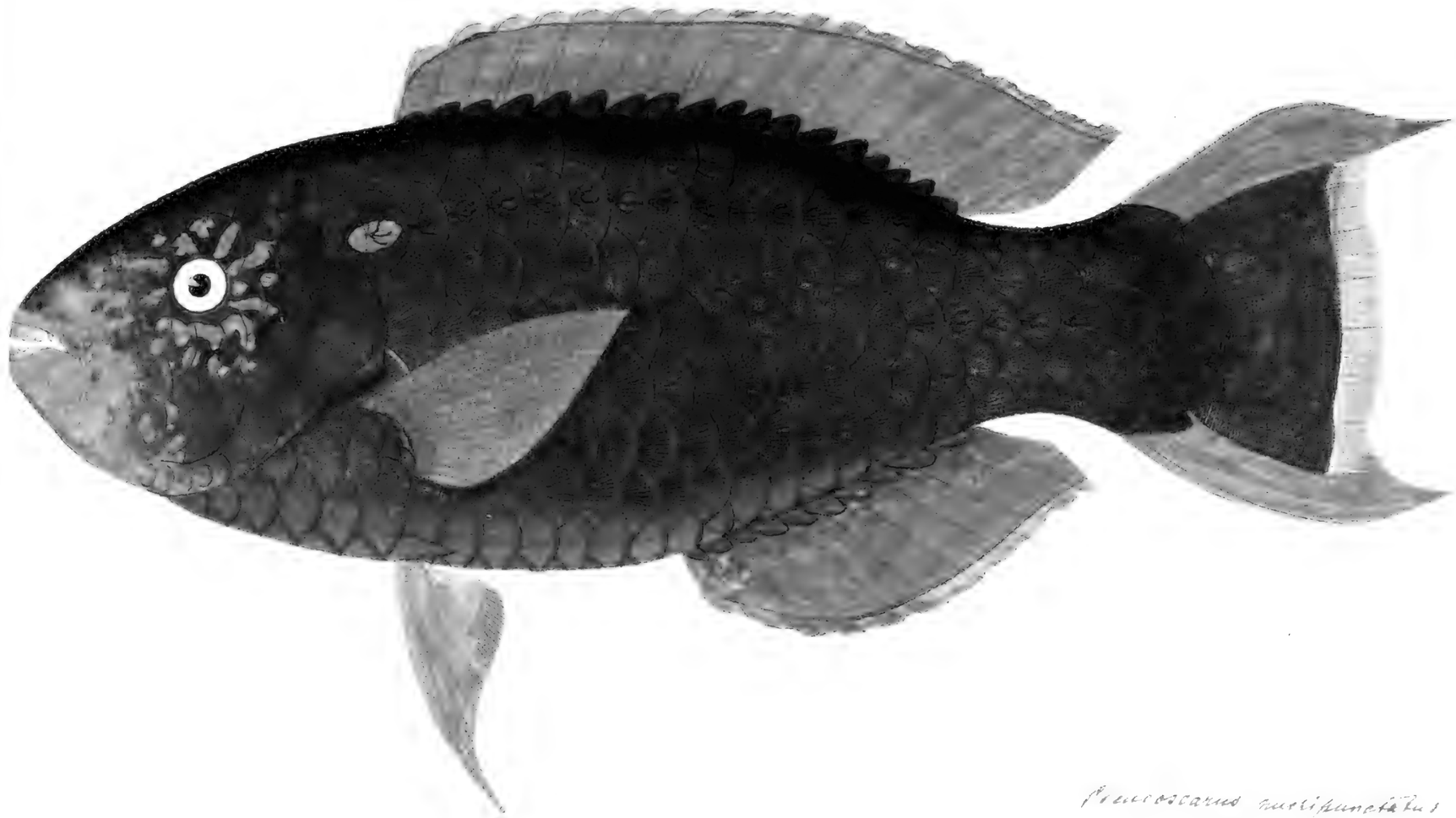
The ground color is dark dusky-green, with a brownish-red hue beneath, and the scales are margined with purple, and black margined, and a green spot marks the origin of the lateral line.

The anterior portion of the head is more or less tinged dove-color. Irregular abbreviated streaks and small spots around the eyes and lower portion of the head, emerald green. Lips margined with vermilion and emerald green, jaws green. Sides bluish silvery. The dorsal, anal, and the upper and lower part of the caudal, reddish brown, the former margined with bluish-green and a fine intra-marginal black line. The anal is margined with blue and like the dorsal has a black line running parallel to the outer margin of the fin. Ventrals and pectorals purple, the former edged with blue. Caudal dark dusky-green, becoming ~~to~~ ~~[illegible]~~ bluish green posteriorly, and edged the same above and beneath.

Length, 27 inches.

Habitat— Society Isls. Kingsmill Isls.

Remarks— At the Kingsmill Islands where it is common, it is called by the natives "Ie-ta-ko-sai".



Pleuroscarus multipunctatus
Val.

Genus Scarus ~~[illegible]~~ pectoralis
cœruleus.

[illegible]

The depth of the body is not the length of the head, which latter comprises a fourth of the total. The upper profile of the [illegible] is slightly concave. Eyes circular, rather large, with a narrow band round the orbit. Lips thick, forming about seven lines in the length of the head. Teeth in a concave series of scales on each side; a large chisel-shaped tooth from the middle of the lower jaw, touches the hinder termination of the upper pair, the outer in both of the lateral and central. The caudal fin is sub-crescentic shaped, central half as long as the rest and slightly pointed.

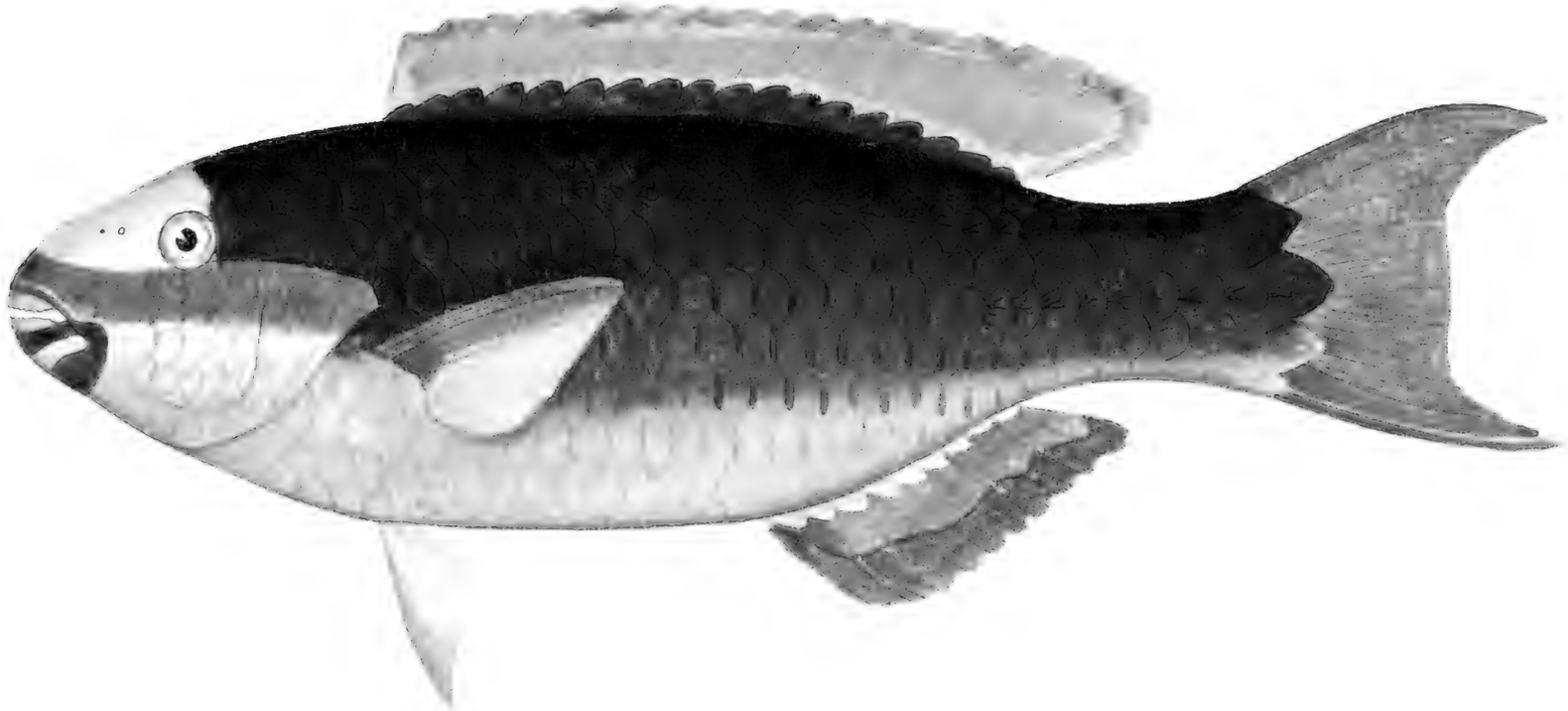
Color rich dark green, passing into bluish-green beneath, each scale with a brown, radiated mark, which becomes broader on the posterior of the tail. The upper outline portion of the head is light olive, the lower half bluish-green. A diffuse orange band

extends from the tip of the snout and terminates at the end of the opercular flaps. A double violet band on the chin and the edge of the upper lips, violet. Irises green; Iris dark, tinged with green. The dorsal fin is amber color, margined with bluish-green. The basal half of the anal is violet, the lower part sap green and the two colors separated by a blue line. The caudal is sap green, margined above and beneath with dark green and an intramarginal violet stripe. Pectoral pale green with, margined above with sap green and an intramarginal violaceous stripe. Ventrals pale bluish green, inclining to green on terminal.

Length, 12 inches.

Habitat:- Society Is.

Remarks:- A common species called by the natives "Hoo-pa-a-ti".



Pendoceros tapeinosoma
australis

pectoralis
Cuvier.

Scarus ~~reperexamentus, Forsk.~~

B. 5; D. 9-10; A. 2-4; L. 5; L. l. 34; l. t. 6/1/2.

The pectoral contitute one-sixth of the total length and contain a rounded or oblique spot upward and forward of the eyes. The greatest depth of the body enters three times and two thirds in the entire length of the fish. The diameter of the eye enters three thirteenth the length of the head. The caudal is sub-crescent shaped.

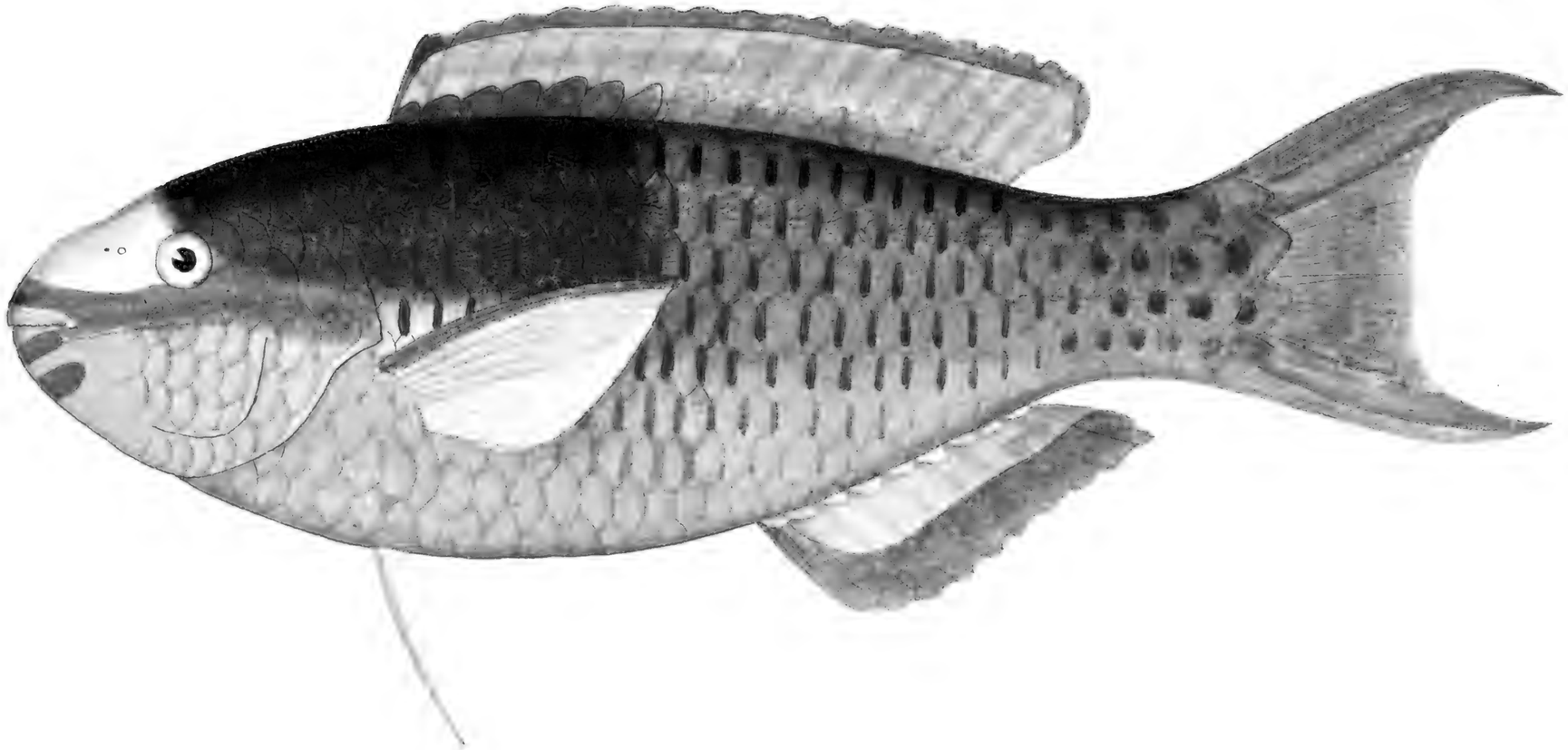
The ground color is green, becoming paler beneath. The upper posterior half of the head and the upper anterior half of the body, blackish green. Each scale on the flanks is marked with a vertical brown bullet spot, and some spots of the same on the caudal trunk. A sage-green band extends from the end of the upper jaw to the end of the opercular flap. Two short transverse bands on the chin. The upper lips is edged with emerald-green. The upper anterior part of the head is dove color. Under filming, some bine-

black. The dorsal fin is pale, margined with green. The basal half of the anal is violet, the outer half and the anterior margin, dark-green, terminal finite green, with an anterior bone margin. The pectorals are dark green above, their middle portion violet and their lower part light green. The caudal is dark-green, its upper and lower third bordered by a longitudinal violet band.

Length, 10 inches.

Habitat.—Society Isls.

Remarks.—A common species at the Society Islands, where it is called "E-u-hee-tu-ro". It is closely allied to S. permonus but may be distinguished by the large deep blackish-green spot on the upper anterior portion of the side.



Z Pseudoscarus carolinus
Lag. 1 pectoralis

Pseudoscarus pectoralis

Pseudo Scurria ~~lugubris, gmelin.~~ godeffroyi

[illegible]

The greatest depth of the body is a little more than a third of the total length, and the head, which has a convex lepidonotus appearance and formed of the [illegible] on each side of the [illegible] the [illegible] of the [illegible] and [illegible] the [illegible] of the [illegible] the [illegible] of the mouth of the [illegible] may be observed [illegible] on the cheek.

The dorsal [illegible] is [illegible] and commences [illegible] above the anterior [illegible] of the [illegible]. It reaches its greatest altitude at the [illegible] portion, which [illegible] of the [illegible] of its own [illegible]. The [illegible] is [illegible] opposite the second [illegible]. The tentacles are [illegible] colored, rather large, their length [illegible] to the [illegible] of the anal pipe. The [illegible] are [illegible] and [illegible] posteriorly, and the [illegible] and [illegible] hinder angles are [illegible] into points.

The [illegible] [illegible] specimen —

-skate which passes into brownish-red on the belly, beneath and lower half of the head. Throughout the scales more incl with dark edges. A short brown inter-marginal band over the anal fin, extending over the eye, the lower of which passes obliquely forward and downward beneath the head, and one or two spots on the lower part of head, dark bluish-green edged with black. Lower light brownish-green. Pelvic silvery yellow, common deep blue-black. The dorsal and caudal are dark red, slender with elongated slate, marginal with black spots. The anal fin is purple red, shading off with a pale blue along its upper and lower margin and marked with a row of blue spots along its middle portion. The tentacles are pale purple-red, antennae edged with bluish-green. Pectorals slate-brown.

Length, 13 inches.

Habitat.- Feejee Islands.

Remarks. This is not very abundant at the Feejee Islands, where we have observed several specimens. Its vernacular name is "Tau-pau-pau-ni"

Pseudo Scurus altipinnis (Stand.) ~~velifer, Cuvier~~.

[illegible]

This species is more robust than usual in spite of the name. The upper and lower outlines are nearly similar, both being regularly arched, and the upper one exhibits a slight concave depression in the intercostular space. The greatest depth of the body is two-sevenths of the entire length of the fish. The head is about equal in length and depth, and comprises a third of the entire length, caudal excluded. The eyes are small, circular, the diameter of which compared to the length of the head is as three to fifteen, and small pores may be observed on either side of the hinder portion of the upper jaw.

The dorsal fin is rather deeper than usual, nearly equaling the head in its greatest portion, and the first ray is broken out into a filament. The anal is not so deep, but equals in length the upper portion of the dorsal, centrally pointed. The pectorals are as long as the anal base. The caudal is large,

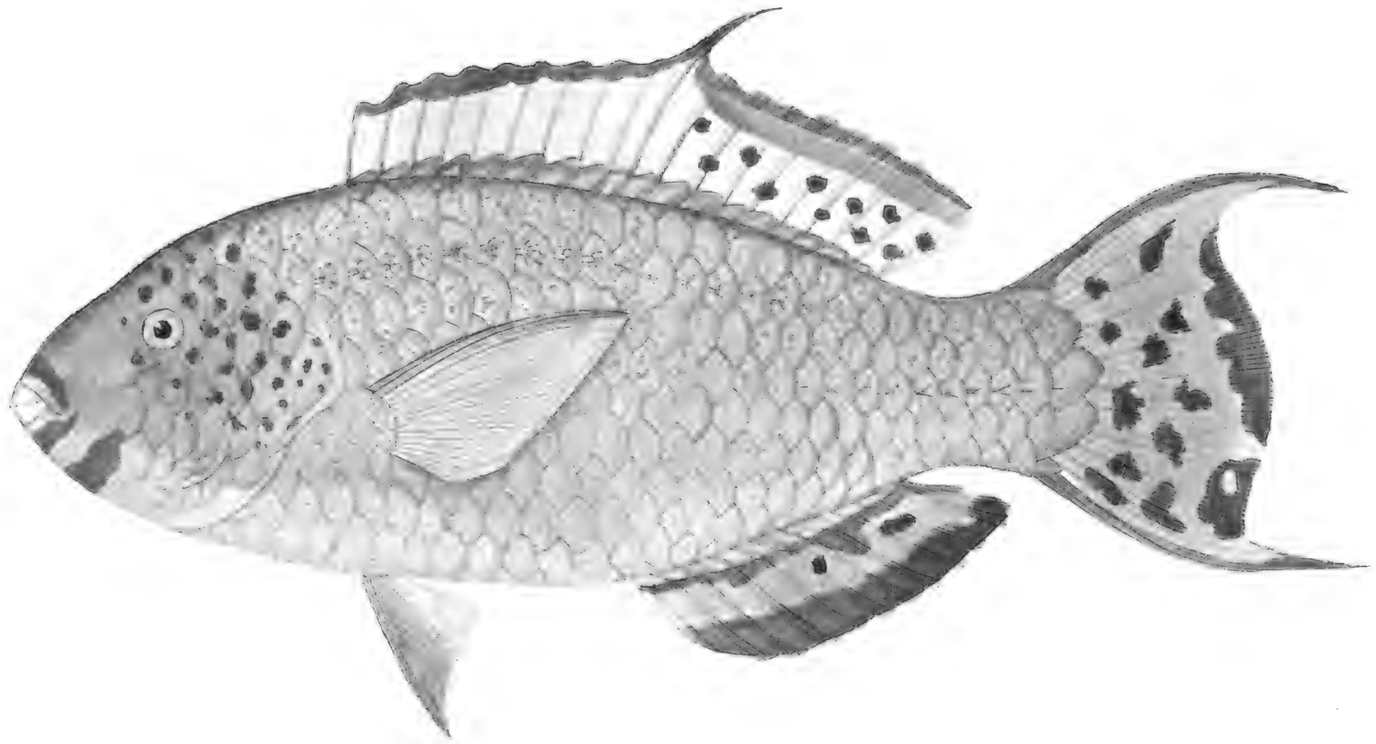
convexly rounded posteriorly, and the angles are prolonged into acute points which are half as long as the middle range.

Color dull greenish, copper-red on the lower part of the head, throat and belly; scales with narrow copper-red margins and irregularly dotted with the same. A regular small bluish-green spot on the upper posterior portion of the head. Two light greenish-red bands over the muzzle and beneath, bluish-green into copper-yellow. Dorsal fin pale brown, the upper margin bluish-green, the soft portion spotted with the same, and marked with an interspinal yellow band. Caudal copper-red, margined and spotted with bluish green, and deep green and brown, bordered irregular copper-red bands edged with blue. Pectoral and pectoral fins with bluish-green, purple-red and copper-red.

Length, 16 inches.

Habitat.— Hawaii, Lanai, Lanai, Oahu.

Remarks. At the former location, where we procured our specimen, it is called "Ohamoi".



brevifilis, Pks

Pseudo-Scarus atromarginatus, Gunth.

[illegible]

about three times in the snout, 2 times in the interorbital space, and nearly [illegible] along the dorsal spine. The teeth, which are in broader bands than those constituting one-third of the jaw, [illegible] excluded. The eye are [illegible], and their diameter [illegible] in the snout.

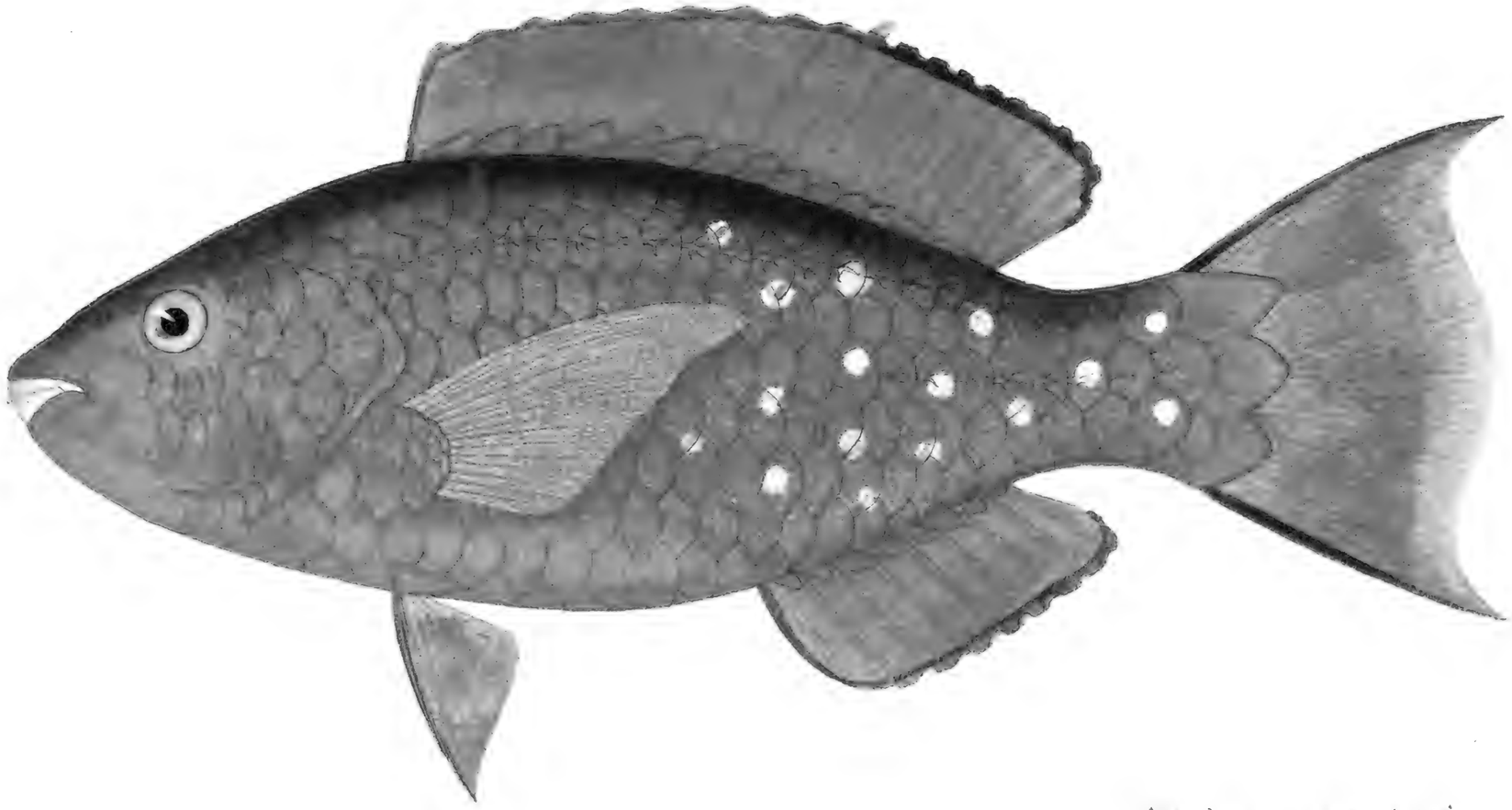
The head is covered with scales on each cheek. [illegible] The first [illegible] ray of the dorsal [illegible] above the membrane, the rays are slightly pointed and hairy in the head. The pectoral are [illegible] pointed. Caudal posteriorly rounded and the two angle [illegible] acute points.

Color nearly uniform red-brown, the former color predominating on the head, breast and belly. A few minute greenish white spots on the anterior half of the body, [illegible] with a brown line near the [illegible] green. The fins are the same [illegible] as the body, and all except the pectoral more or less margined with [illegible] blue-green.

Length, 12 inches.

Habitat. Society I.s.

Remarks. I have seen but two or three specimens of this species, which is called by the natives of the Society Islands, "Hou-u-hu-u-te" The white spots are more or less evanescent.



[illegible]

Pseudoscarus abacurus

~~[illegible]~~

B. 5; D. [illegible]; A. [illegible]; [illegible]

The head is contained [illegible] in the total length of the fish, [illegible] three and a half; [illegible] width [illegible] than [illegible] length of the body. [illegible] the eye [illegible] diameter entering about six and a half times in the length of the head. Two concentric rows of scales on the cheek. The dorsal fin commences [illegible] of the opercular flap and [illegible] the anal. The caudal [illegible] convex.

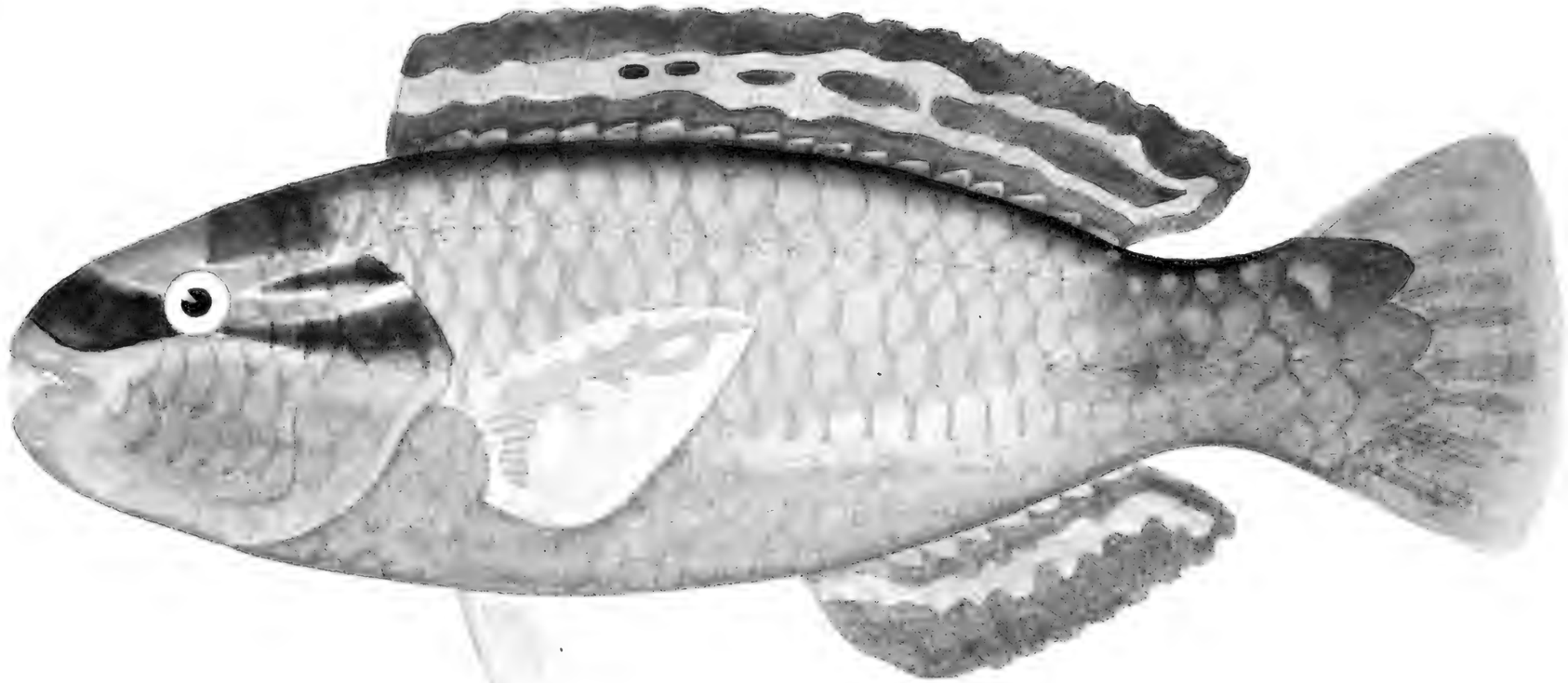
The upper [illegible] of the body [illegible]-violet passing into bluish green beneath and on the caudal [illegible]. [illegible] ornamented with a vertical [illegible] spot, which becomes [illegible] and the peduncle of the tail, [illegible] three [illegible] the back [illegible] a horizontal stripe. [illegible] upper third of the [illegible] crimson-[illegible] slate-green. [illegible] stripe beneath the eye, [illegible] pectoral [illegible]

space, emerald green. Lips irregularly edged with pinkish-red. Side stripe with a pinkish tinge. The dorsal fin is dark green, traversed by a horizontal wavy, pinkish-red band in which are some dark green oblong spots. Anal fin sap green, marked with a horizontal wavy pinkish-red band on its basal half, surface pale green, with an outer bright green margin. The pectorals are unicolor green, ornamented with a long, thread-like blood pinkish-red stripe. Caudal dark green, with sap green shades.

Length, 12 inches.

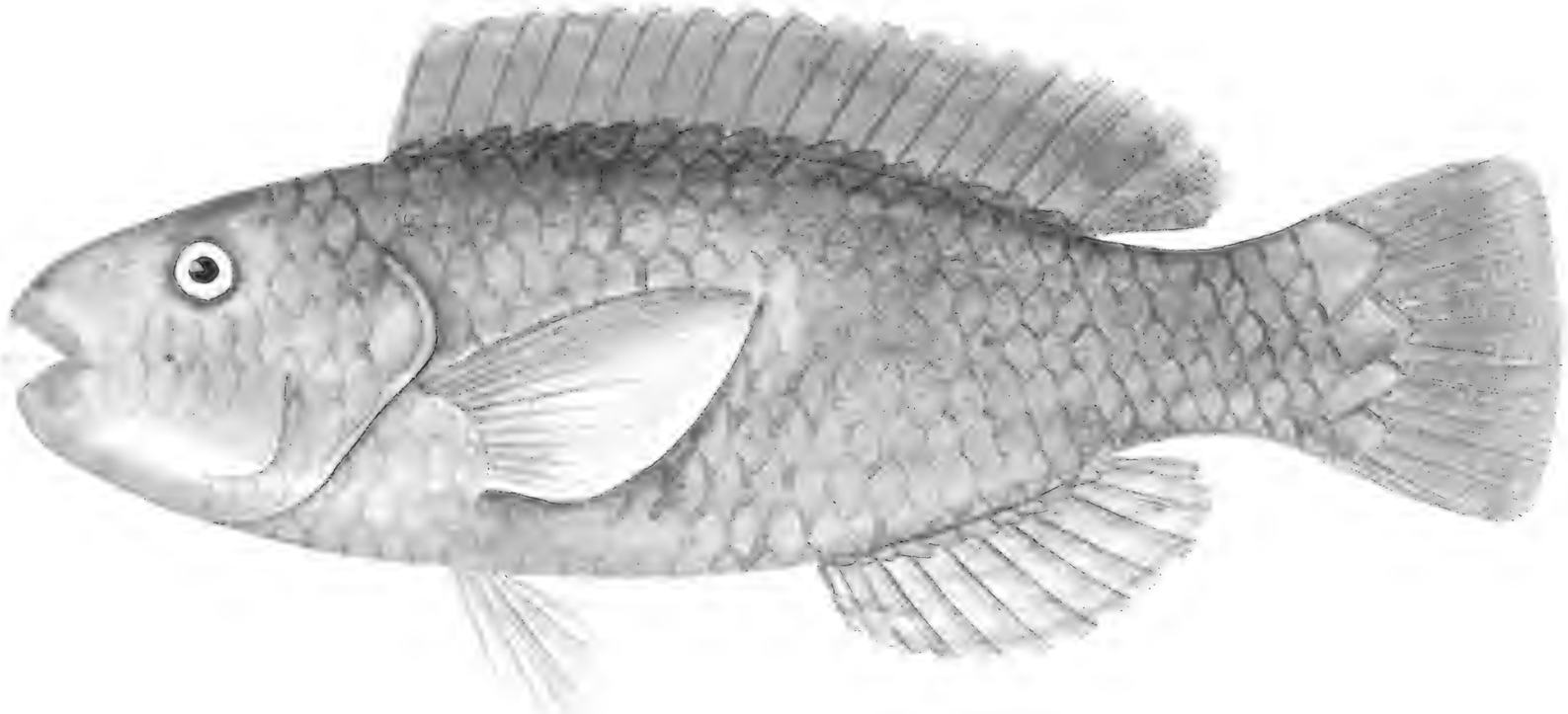
Habitat.— Keith Bay, Sandwich Sd., Kingsmill Isl., Sandwich Sd.

Remarks.— Off the Fijian location this form is called "E-u-hu-mi-hou." It may be easily distinguished by the yellow ground on the upper two thirds of the body, which in the dried fish becomes greenish-yellow.



Pseudoscarus abacurus
Tafel 162.

Bahll Haft. sc. del.



Pseudosarus

Icarus depressirostris. Cuv.

D. 9–11; A. 3–4; L. 1 s.; L. 1 l.; C. 2, 1, 6, 5, 1, 1.

This Icarus is characterized by the upper jaw being the longer, the lips covering the jaws, and the depressed upper profile of the head. The cleft of the mouth runs slightly upward towards the eyes. The eyes are circular, approximating the upper line of profile, and their diameter equals one-fourth of the length of the head. The snout is fifth of the total length. The head is broad in its lateral, anteriorly, constricts a little more than a fourth of the fish. The caudal and its peduncle small, the former two-ninths of its hinder margin and the upper and lower are prolonged into broad lobes. The upper margin of the caudal are concave.

Color of the dried fish is bluish drab, semi-green when the upper parts are light violaceous-blue from the scales. The scales more or less edged with dusky, on the upper part with black points. Sides pale, with the vertical pencil

straw-yellow, margined with light violet; the dorsal and anal marked with a longitudinal series of similar colored spots. Ventrals slightly tinged with pink. Pectorals tinged with shade of olive and margined with violet as above.

Length, 18 inches.

Habitat.— Panama Isls.

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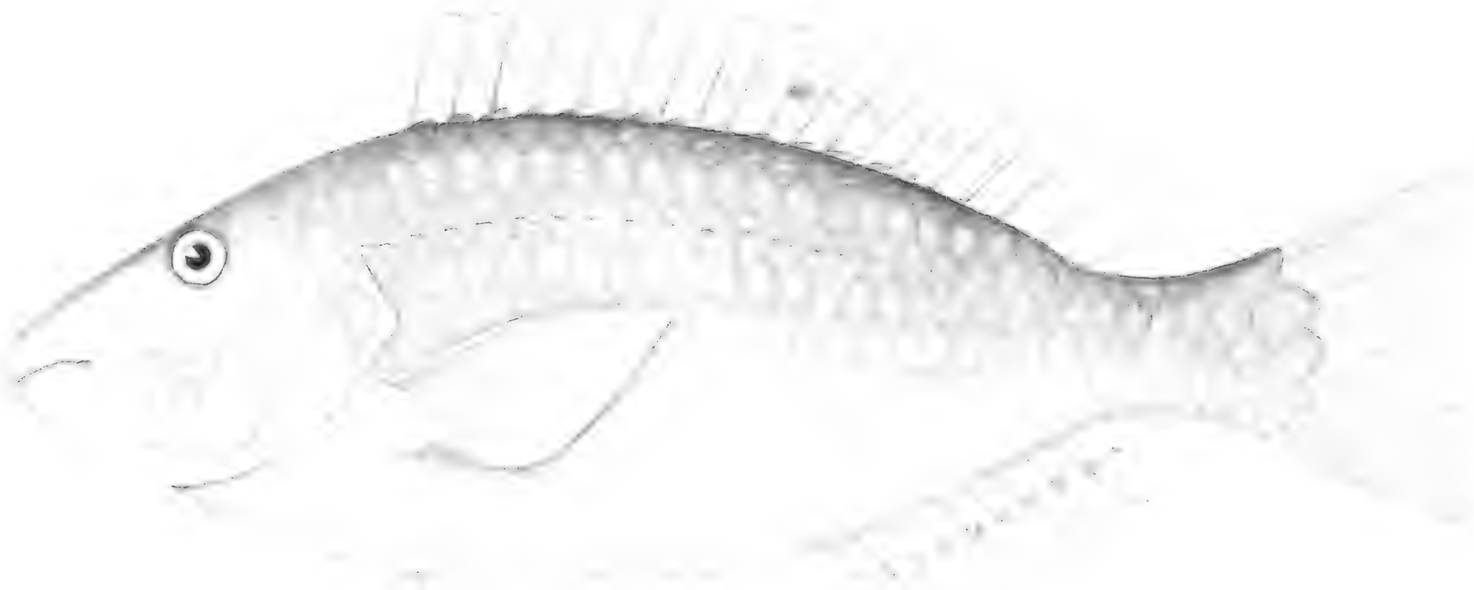


Pendoscarus

Icanus ~~[illegible]~~.

[illegible]

The gape is deep, in fact it not quite a third of the total length, the hinge which unites the lower and upper mandibles on the entire mouth, is thus carried well up the face of the head, and the cleft is bounded off. The eyes are central, each lifted on a mouth of the length of the head, and the posterior limit of their orbits are immediate between the end of the mouth and the hinder termination of the premaxillary bones. Nares may be observed, but cannot be seen of scale on each cheek.

The plates of the tail are origin in advance of the operculum, corners and are not expanded quite as far back as the anal. The dorsal is rather small and concave emarginate behind.

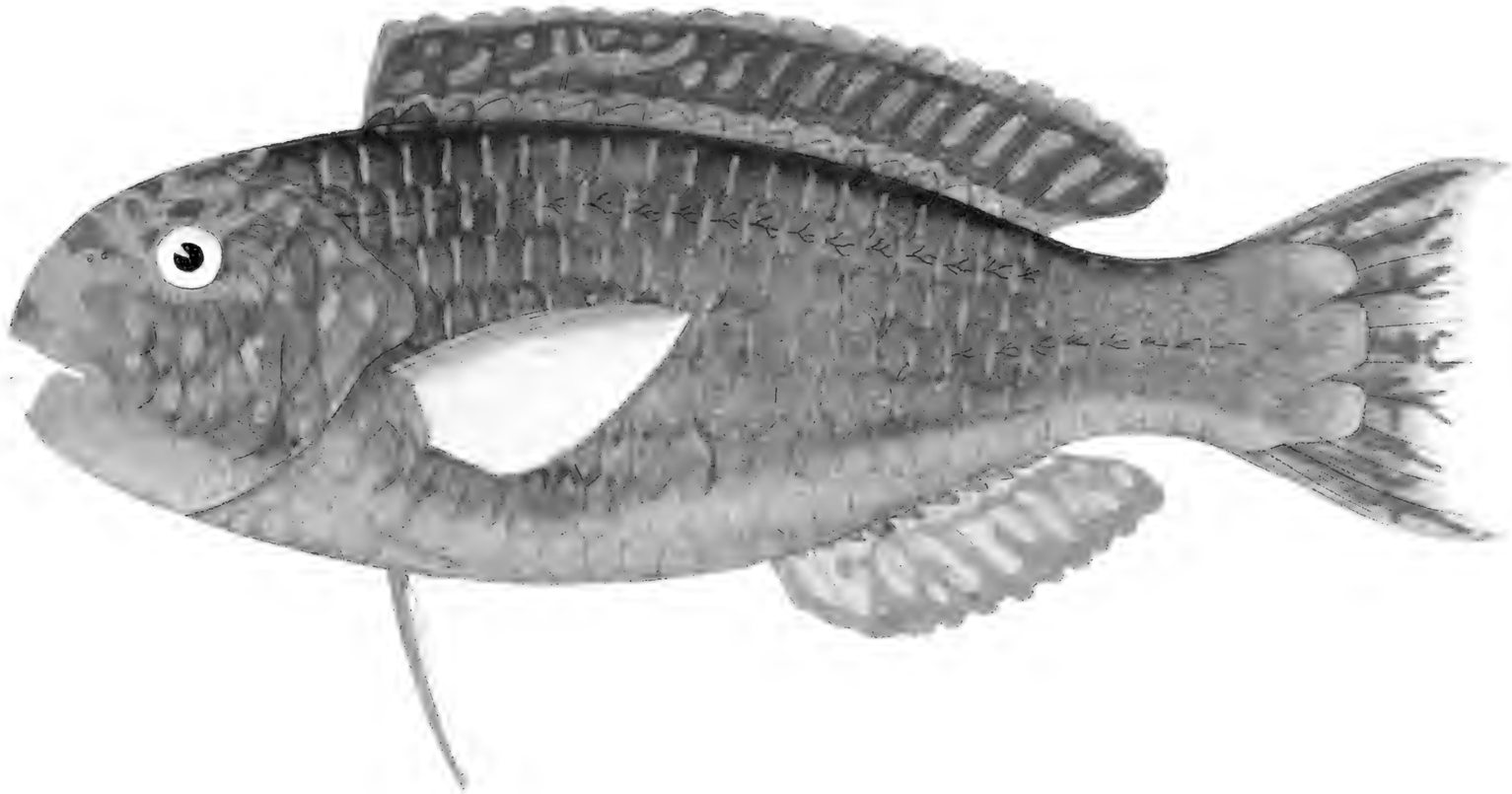
Colour dark olive, becoming lighter-green beneath, with often vertical spots on each scale, conspicuous on the sides of the tail, a few also visible on the side of the body, more on the opercula and retroarticular on the [illegible]

of the head, dorsal fin, tips of caudal lobes with green. The dorsal fin, dark bluish-yellow margined above and along its base with bluish-green, a pale longitudinal streak of the same color in the spinous portion, and elongate rays parallel to the ray on the upper part of the fin. The anal is blue, marked with irregular large brownish olive colored spots which are mostly disposed parallel to the rays. Pectorals pale bluish green uniformly, margined with blue, which is shaded off with light pale yellow. Pectoral pale green, with a blue upper margin. Lateral mark green becoming paler posteriorly, and marked in the direction of the line with dark upper and irregular stripe which are more or less branched and confluent.

Length, 14 inches.

Habitat. Florida, Ad.

Remarks. If this species be more than but three specimens. Its most obvious characters are its exceedingly marginated profile and peculiar markings.



Pseudoscarus

Scarus ~~gibbosus, Bonnt.~~

B. 5; D. 9-10; A. 9-10; P. 1-5; V. 1/5; L. 2, 1, 6, 5, 1, 2.

The greatest depth of the body equals the length of the head, or nearly a fourth of the total length of the fish. The head is strongly gibbous upward and forward of the eyes, and the snout is nearly vertical. The diameter of the eye is one-seventh of the length of the head, and is situated nearer to the end of the snout than to the hinder termination of the opercular flap. A small spine on the posterior portion of the upper jaw. The concentric rows of scales in each cheek, fourteen, are nearly along the median line of the body and twenty-four are marked with the characteristic lateral line tubes.

The dorsal fin is moderately elevated, its height being about one-eighth the length of its own base. The ventrals are prolonged into acute point, and their length equals one-third of the dorsal base. The large caudal is crescent shaped.

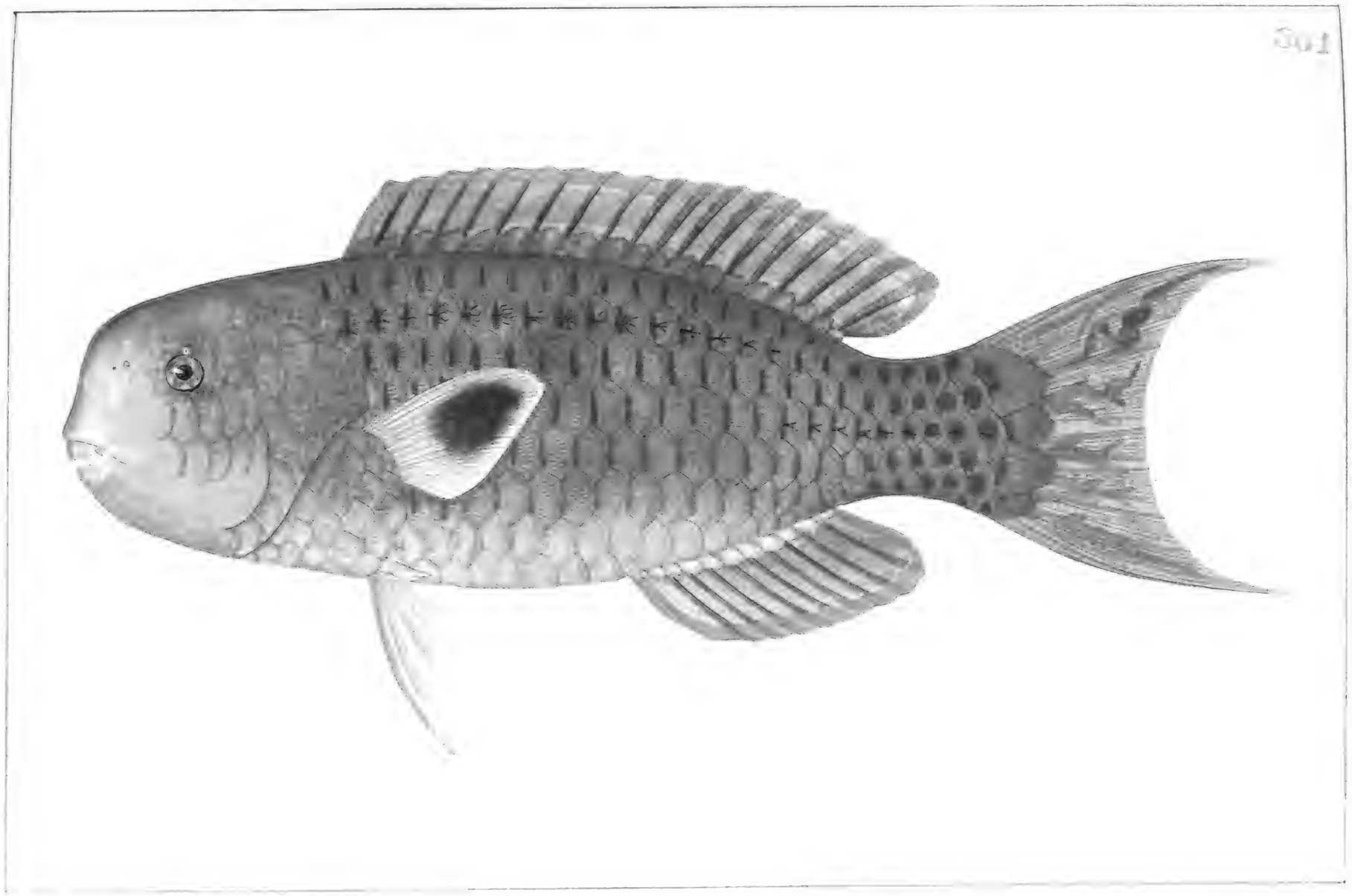
Color rich blue green, paler beneath. Scales with deep colored margins and each marked with a vertical linear fawn colored spot, which assume

a rounded shape on the front of the caudal fin. A few small spots near the eyes and reticulated lines on the precipierela, lilac color. Iris cupreous. The dorsal and anal are triangular, margined with deep bluish-green. The caudal is bluish-green and longitudinally streaked in the direction of the rays with deep violet. Ventral and pectorals pale bluish-green, the former anteriorly edged with rich light blue, and the latter with a large sub-central diffuse black spot.

Length, 14 inches.

Habitat.—Society Isls.

Remarks.—A large beautiful species called by the natives of the Society Isls, "E-u-du-ta-ro". Its obvious characters are its gibbous forehead, vertical snout, pointed pectorals, crescent tail and peculiar markings.



Pseudoscarus

Icarus ~~fuliginosus, sp. n.~~

Sp. Char.—Dorsal surface uniformly sooty black.

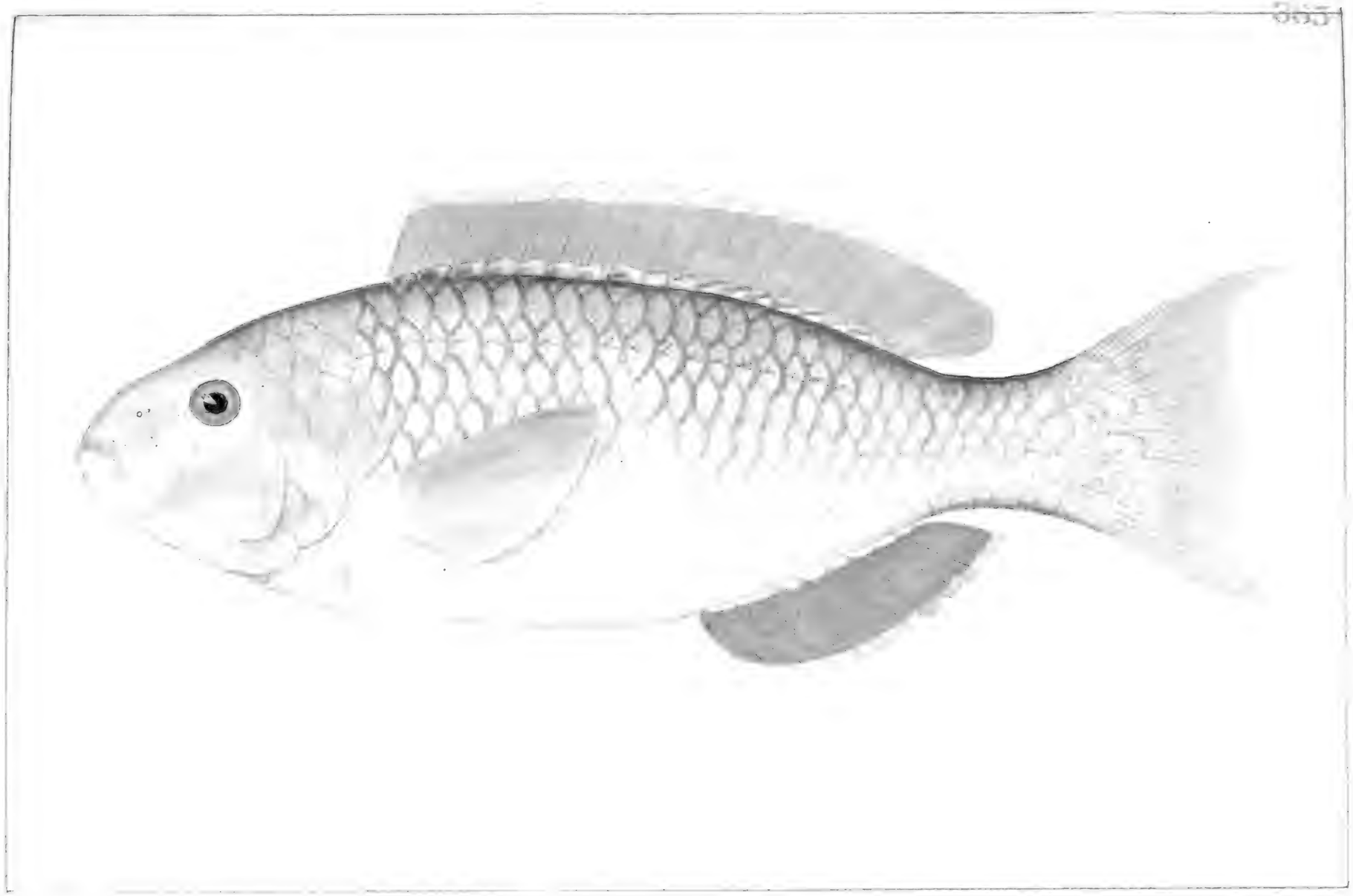
The greatest depth of the dorsal is about three and a half times in the total length. The head which constitutes a fourth of the fish, is slightly concave upward and forward of the eyes. The snout is more or less in each sex. The mouth is terminal, oblique, with the angle of jaw not extending to a point.

Color of the fresh specimen dark brown, changing to a light sooty brown in the dried specimen; sides marbled with olive-yellow, and the fins are tinged with coral; under the yellow, iridescent deposit, head of pink orange-red, margined with light brown, and dark orange-red, marginal with red; blended pale brown, metallic amber, yellow, and metallic colors.

Length, 12 to 14 inches.

Habitat.—Lake Erie.

Remarks.—This species is characterized by its pale color. In the Lake Erie Islands it is called "Ethelmo".



Pseudoscarus

? Brotula marginalis

Ophidium [illegible]

[illegible] Form elongate, [illegible] compressed anteriorly, and slightly compressed posteriorly. The greatest depth is in front of the pectorals, and equal to about fifty-five in the total length of the fish. The body gradually tapers backwards to a point. The scales are minute, covering all parts of the body and head except the jaws, and extend high on all the fins. The lateral line is [illegible] to the [illegible] and straight to the remainder of its course. The head which is contained four times and a half times in the length of the body, is [illegible] long and high, and in front of the unarmed space, four on the [illegible] upper jaw, six attached to the [illegible] two separate ones on the [illegible] is long, [illegible], and its breadth [illegible] one fifth that of the head, and nearly one third its length from the end of the upper jaw. The gape of the mouth is oblique, and the hinder tip of the maxillary reaches behind the orbit. Teeth fine villiform, in a single band in either jaw. Similar teeth on the [illegible] pharyngeal plates, those on the former being disposed in the palatine in the form of the letter V, and those on the latter, ten in the upper and three on the lower pharyngeal plates. The scales are covered with a tender, [illegible] membrane.

The dorsal fin [illegible] the

? Brotula marginata

Genus Ophidion

Body elongate and [illegible] compressed, deepest anteriorly, gives place to the head to a pointed tail, [illegible] but not well defined. [illegible] near the throat. Head well above [illegible] short, and the upper jaw the longest. Mouth more or less oblique, with [illegible] gape. Pharyngeal teeth and [illegible] teeth on [illegible] jaws, [illegible] lines of [illegible] opening [illegible] located between the eyes and end of snout. Branchiostegal rays six, slender and not covered by the gill covers. Gill openings [illegible] by a [illegible] isthmus. Eyes inserted in advance of the hinder corner of the mouth. Dorsal fin [illegible] times reduced to a mere [illegible] fold. Anal commences beneath the pectorals, and tapers away to the pointed tail. Pectorals oval and more or less developed in different species.

These remarkable fishes are [illegible] in their [illegible] habits, being found in the water cavities of Holothurians and some of the large Star-fishes.

Ophidion No 132 Fierasfer parvipinnis

The body is very elongate and considerably compressed, tapering away from the head to the pointed tail. The greatest depth is compared to the total length as one to about thirteen. [illegible] is by no means conspicuous [illegible]

linear in its course to the tail. The head is short, longer than deep and less compressed than the body. It comprises nearly a ninth of the total length of the fish, and the muzzle is very short, tapering, and the snout projects slightly in advance of the lower jaw. The mouth is large, very oblique in its closure, and the hinder extremity of the maxillary extends far posterior to the eyes. The jaws are nearly even and the lips are narrow, thin, the lower are united to the [illegible] of the jaw by a broad frenum. The lower maxillary teeth are small, acute, conical, disposed in a closely set band, of which the external ones are the largest. Those on the upper jaw are card-like and also disposed in bands. An elongate band of small conical teeth exists on each palatine and the prominent vomer is furnished with a small patch of teeth like them on the palatines, but have in addition two or three which are more developed than the others. The eyes are small, circular, their diameter as compared to the length of the head is as one to seven, and they are situated just once their own diameter from the end of the snout. Just in advance of the eyes may be observed the double nasal openings, the anterior exactly midway between the border of the orbit and the end of the snout.

The dorsal fin consists of a mere fold of the skin, without

any visible rays, and may be traced on the posterior two thirds of the fish. The anal fin is considerably developed, commencing beneath the base of the pectorals, and close to the anus and tapers away either way from the anterior fourth. It is composed of simple articulate rays and is inveloped in the integuments. The minute pectorals are ovate in shape, inserted on the median line of the body, and composed of about a dozen rays.

The color of this species is light brownish, paler beneath and covered with most minute brown dots of a deeper hue than the ground color.

Young individuals are more slender and fusiform.

Length 9 inches.

Hab. Society Isls.

Oxybeles No 131 Ferasfer hornii

This species may be distinguished from the preceding one by its more oblong head, less oblique mouth and more oval eyes. The body is also more slender posteriorly and the dorsal fin is slightly more developed. The pectorals are also larger. The lower jaw is armed with a single range of acute, slightly hooked teeth, and a band of smaller ones on the upper jaw, otherwise the same as the preceding species.

This elegant species is so transparent that the whole bony structure is distinctly visible. The head and abdomen are varied with the most brilliant silver and golden reflections. Bluish silver shades on the top of the head. Sometimes there is a series of black dots along the base of the anal fin, and most generally a row of similar dots dispersed in pairs along the median line of the body.

Length 8 inches

Hab. Society Isls.

Native name Pu-hi lo-te.

Species No 133

Not having made any notes at the time I obtained the specimen, I cannot give any description, and can only refer to the drawing for information relative to color and shape, which is cylindrical. The drawing is natural size. Of the single specimen obtained at the Society Isls. at the Niti Isls I saw an example 3 feet in length. They live in the sands.

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363

Pierasfer homei

Pierasfer parvipinnis

132
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